Be tough: IT vendors are ready to bargain. Page 7

Zander out: A top-management exodus hits Sun. Page 19

COMPUTERWORLD

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HOLES EXPOSE RETAIL DATA

Vulnerabilities found in wireless LANs of Best Buy, Home Depot; breach downplayed

BY DAN VERTON AND BOB BREWIN

White-hat hackers last week discovered vulnerabilities in the wireless networks of two major retailers — holes that they claimed exposed data that appeared to include customer information.

WIRELESS SECURITY

On May 1, an anonymous hacker posted a message on an online security mailing list stating that he had discovered holes in the wireless LANs operated by Best Buy Co. Later that day, Jonas Luster, co-founder of security consultancy D-fensive Networks Inc. in Campbell, Calif., told *Computerworld* that he had conducted a test of networks operated by a San Jose outlet of The Home Depot Inc. and found similar vulnerabilities.

Best Buy said it shut down its wireless LANs shortly after the initial report surfaced. The San Jose Home Depot network, which Luster said exposed what appeared to be SQL database queries, shut down on May 2, he said.

Retail Breach, page 16

ANSWER US NOW, HP USERS INSIST

Product road map is postmerger priority

BY JAIKUMAR VIJAYAN

Bring out the road maps.

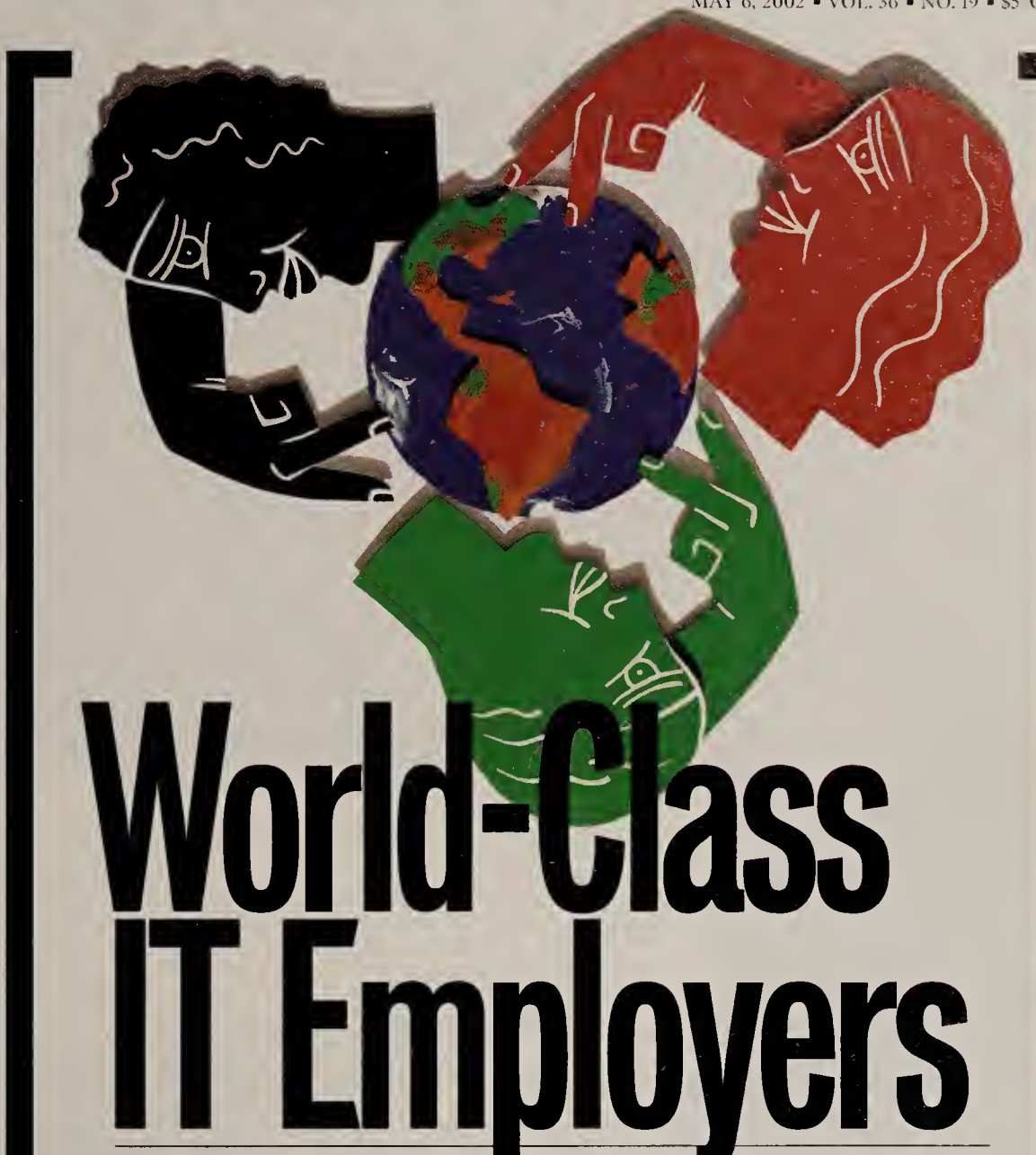
That's the demand from users as HP and Compaq finally launch a merged company this week amid continued uncertainty. The lack of information has some of those users withholding all spending on products from the two vendors.

The rancorous, months-long proxy battle ended last week with the Delaware Chancery Court in Wilmington rejecting former HP board member Walter Hewlett's lawsuit to throw out the HP shareholder vote.

HP formally closed the merger with Compaq Computer Corp. Friday and said it will launch the new Hewlett-Packard Co. tomorrow.

"I think both companies are going to see that the benefits they are hoping for from this merger will be less than ex-

Postmerger, page 85



World-Class IT Employers

Despite the tough economy, keeping prized IT workers satisfied is still a top priority at companies in the U.S. and around the world. The best employers know how to do more with less while keeping their IT staffs content and challenged. Some highlights from our special report:

COMPUTERWORLD The Best Places to Work in IT

- What IT workers really want from their employers (it's much more than just pay).
- Tips for building a workforce that's diverse in both culture and ideas.
- How one CIO helped build an IT department with staying power.
- The best practices of IT employers from around the world.

STORIES BEGIN ON PAGE 25

ONLINE EXCLUSIVES

Here's a sampling of the additional features available online:

A company that shuns titles and organization charts gives workers an opportunity to play to their passions.

What makes for a Best Place to Work in North and South America, Europe, Africa and Asia.

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LUBA LUKOVA

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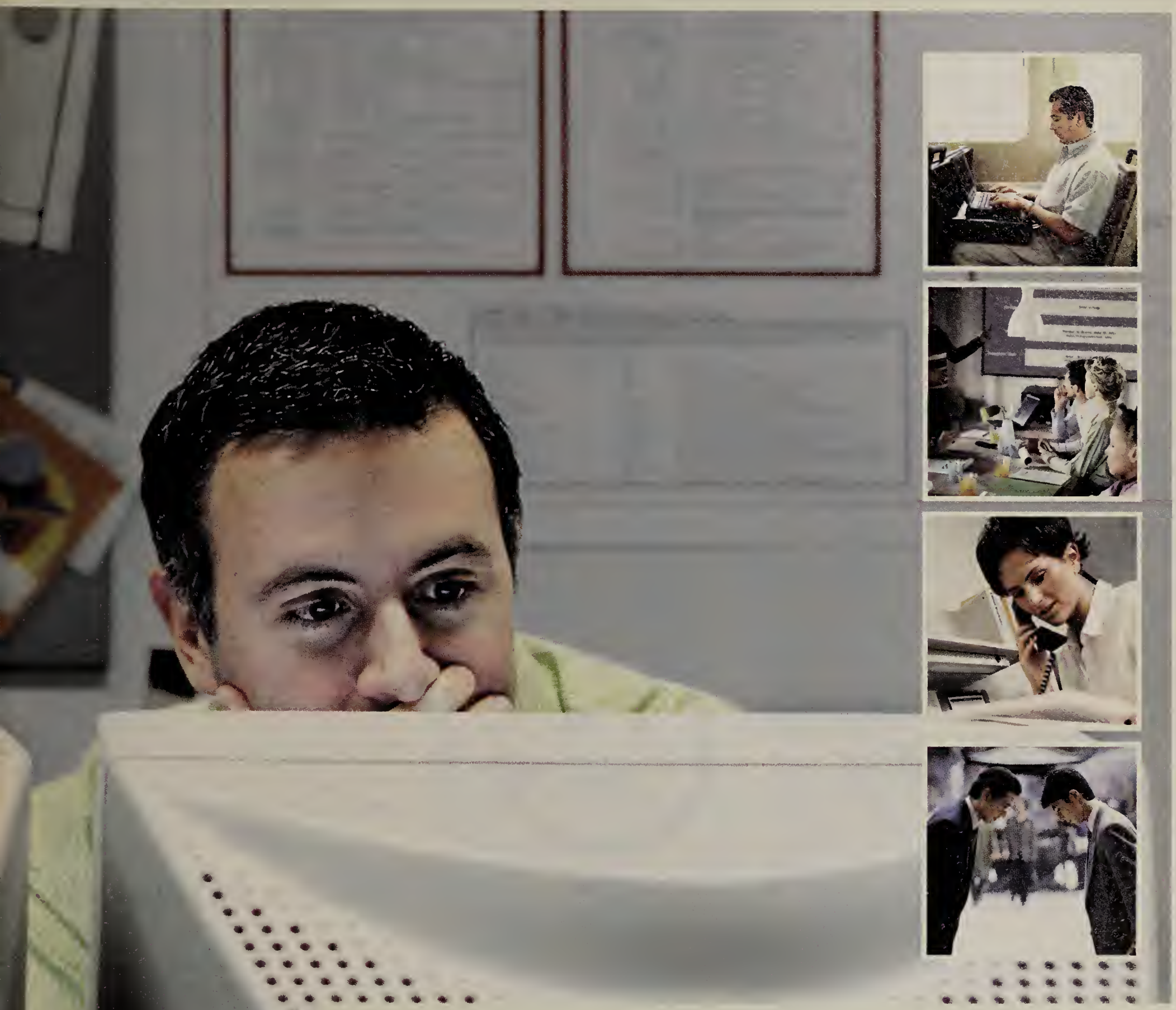

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COMPUTERWORLD THIS WEEK

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7 The time to negotiate a better deal with your vendor is now, according to IT managers attending Gartner's Symposium/ITxpo 2002 conference.

8 Microsoft talks about the future of its management products, but users want the company to concentrate on present issues.

10 A Minnesota airline is saving millions of dollars with its storage over IP network for disaster recovery and business continuity.

12 Sun's StarOffice is poised to gain market share from users who want to bypass Microsoft's enterprise licensing plan, says Gartner.

14 EBay's presence at Networld+Interop highlights the auction site's increasing interest in bargain-price networking equipment.

For breaking news, updated twice daily, go to our Web site: **www.computerworld.com/news**

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ONLINE THIS WEEK

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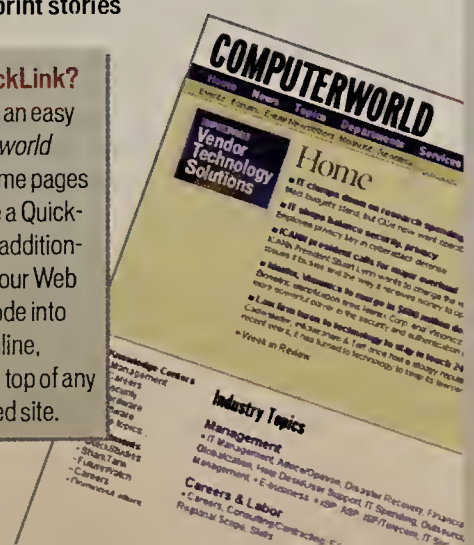

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Despite the tough economy, keeping prized IT workers satisfied is still a top priority at employers in the U.S. and around the world. This special report offers tips on how the best employers are doing more with less, while keeping their IT staffs content and challenged.
Online: View the full Best Places package, with exclusive stories and chart data. **QuickLink: a1970**

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The best U.S. employers know their IT workers get charged up by far more than money. They want an employer that can be a partner in helping them achieve their career goals.

28 Offer Access to Hot Technology
To keep IT workers motivated and loyal, the best employers give them access to hot projects that help advance their careers and stretch their skills.
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30 Deliver Top-Drawer Training
Top employers get a high return on their training dollars, while giving employees valued skills in the marketplace.
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Career development is a complex stew of individual potential, peer and supervisor feedback, training and coaching. The best employers know how to keep the pot bubbling.
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The Best Places to Work in IT

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Leading IT employers know that low-cost benefits score high with their staffs. The option to telecommute and a flexible work schedule top the list.
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A variety of viewpoints is what drives success at these Best Places to Work in IT. For them, the business returns from a diverse staff are tremendous.
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To retain top IT workers, the best employers offer more than good jobs — they help build exciting careers.
Online: The Best Places pony up for pricey certification programs and tuition reimbursement. The payoff is content workers. **QuickLink: 28994**

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Also, take a look at how these companies measure up against one another and how we chose the winners.

64 All-Star Employer
Former Home Depot CIO Ron Griffin shares his insights on building a winning IT team. Also, check out this ranking of employers that have been named to the Best Places to Work list most often and scored the highest over the past nine years.

68 Best Practices Are Universal
Though their languages, cultures and climates differ widely, IT workers worldwide have many of the same career goals. Also, *Computerworld*'s first-ever list of the 100 Best Places to Work in IT Worldwide.

ONLINE EXTRA
Try out the interactive charts online

The U.S. Best
Find more information about the 100 Best Places U.S. online in a chart that can be sorted by company and benefits offered.
QuickLink: a1980

The Historical Best
Check out the full list of 100 Best Places Historical, which can be sorted by employer, industry and ranking each year.
QuickLink: a1990

The Worldwide Best
Read our interactive chart of the 100 Best Places Worldwide, which can be sorted by employer, region and benefits offered; profiles of each employer; and regional trend stories.
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AT DEADLINE

Calif. Takes Steps Against Dept. of IT

In the wake of a damaging report on an Oracle Corp. database deal [QuickLink: 29291], the California governor's office last week said it received an unsubstantiated report that the state's Department of Information Technology (DOIT) had been shredding documents. According to a statement, the California Highway Patrol was dispatched to secure all shredders and trash, and the DOIT was ordered not to shred documents.

WTO: Global Economy Hit Hardest by IT Slide

The global economic decline in 2001 was mainly due to the slump in the IT industry, which will continue to retard any sort of recovery in 2002, the World Trade Organization (WTO) said in a report. WTO economists predict a moderate recovery of no more than 1% in 2002.

PwC Consulting IPO Set for August

PricewaterhouseCoopers will spin off its management and IT consulting unit via an initial public offering (IPO) in August. PwC Consulting, as the unit is currently known, left no doubt in its IPO registration with the Securities and Exchange Commission that the issue of auditor independence was a big motivator in its move to become separate from PricewaterhouseCoopers.

Short Takes

A jury in Delaware has determined that San Francisco-based MACROMEDIA INC. infringed on technology patents held by San Jose-based ADOBE SYSTEMS INC. and has awarded Adobe $2.8 million. . . . Demand for disaster recovery services in the Asia-Pacific market (excluding Japan) is growing at 20% per year and will be worth $1.3 billion by 2006, according to IDC in Framingham, Mass.

U.S. Steel Gets Tough On Acceptable Use

Deploys tool to detect inappropriate computer use and provide audit trail

BY DAN VERTON

UNITED STATES Steel Corp. recently ordered its IT department to crack down on non-business-related computer use at its Gary, Ind., manufacturing plant. And the news is spreading among workers there to watch their Web surfing and avoid sending e-mail or chat messages that contain sexually offensive content.

Pittsburgh-based U.S. Steel has deployed an application from Sugar Grove, Ill.-based Security Software Systems Inc. called Policy Central that automates acceptable use policy enforcement and produces an audit trail of activity on employees' computers.

"We wanted to protect the company," said Brian Price, IT communications manager at U.S. Steel. "In the majority of the cases, we found people browsing Internet sites that have foul language. Our main concern is to make sure people aren't looking at pornography or engaging in sexual harassment, and any activity that can hinder the performance of their jobs."

So far, there hasn't been any grumbling from employees, said Price. However, a handful of individuals have been caught surfing inappropriate Web sites since the company began using Policy Central, he said.

"By word of mouth, it has started getting around. People are starting to realize how much we can monitor," Price said.

Fair Warning

But the software goes beyond simple monitoring. Policy Central can be configured so that company policies are displayed at log-in, forcing users to accept or decline before getting access to their computers. Then, every application — from Microsoft Word and e-mail to Web browsers and instant messaging software downloaded from the Internet — can be monitored for inappropriate material.

If a violation occurs, a screen capture is taken and sent to administrators for review.

"It gives you hard-copy documents that you can take back to the user as evidence," said Price.

Dan Jude, president of Security Software Systems, said the software can be used to protect companies from wrongful-dismissal lawsuits.

However, Keith Morgan, chief of information security at Terradon Communications Group LLC, a Nitro, W.Va.-based content management firm, said application-level monitoring, while interesting, should be done carefully.

"The impact on morale from such close and direct technical monitoring of user activities can have a very negative impact on an organization's productivity," said Morgan. "Users tend to be a little nervous in an environment where Big Brother is watching every keystroke and mouse click."

Bill Malik, an analyst at Stamford, Conn.-based KPMG LLP, agreed. "An incident where a user is doing something perfectly acceptable and gets busted for policy violation could generate a major attitude problem with the workforce," Malik said. "Technology has never solved management lapses. Tools can't sit in for leadership." ◗

Policy Central

A look at U.S. Steel's new security application:

OPERATING SYSTEM: Windows 98, Me and NT 4.0

PROCESSOR: 166-MHz Pentium or compatible

MEMORY: 32MB RAM (64MB recommended)

STORAGE: 20MB hard-disk space

COST: 20 users: $44 per seat; **2,000 users:** about $30 per seat

Correction

In the April 1 column by Paul A. Strassmann [QuickLink: 28368], figures that represented the total transaction costs for 6,603 U.S. corporations that were researched by the author should have read $1.64 trillion for 1990 and $1.91 trillion for 2000.

Strassmann Named NASA Senior Adviser

Agency taps IT vet to assess infrastructure

BY JULIA KING

Last week, NASA named former U.S. Department of Defense CIO and *Computerworld* columnist Paul A. Strassmann to a one-year post as senior adviser on information management and technology.

According to Brian Dunbar, a spokesman for NASA, Strassmann will work closely with NASA's top officials, including its chief financial officer and CIO, to help streamline and modernize the space agency's aging IT infrastructure, which comprises 10 field centers. Those include the Johnson Space Center in Houston, Kennedy Space Center in Florida and JPL Propulsion Laboratory in Pasadena, Calif.

STRASSMANN will help modernize IT operations at NASA.

Strassmann will also conduct an analysis of NASA's current IT operations and help develop and implement an agencywide IT plan, NASA officials said.

He will play a big part in the space agency's "one NASA" vision, said Dunbar, referring to NASA chief Sean O'Keefe's goal of centralizing the agency's far-flung IT and financial operations.

Strassmann will also work closely with the agency's special assistant for financial management to optimize the efficiency and operation of an ongoing program known as the Integrated Financial Management Program (IFMP). IFMP's aim is to consolidate a variety of financial and accounting systems into a single platform, Dunbar said.

In a statement released by NASA, O'Keefe said Strassmann's experience is a key reason for his appointment.

"His experience in advancing next-generation technologies and information management concepts will be vital as the agency explores a comprehensive IT strategy," O'Keefe said. "I look forward to his innovative contributions as we move to update and upgrade NASA's IT infrastructure."

When contacted at his home office in Connecticut, Strassmann said he was "under total press silence." ◗

'TAIL' OVER 'TEETH'

To read Paul A. Strassmann's latest column online, visit our Web site:

QuickLink: 28368
www.computerworld.com

Gartner Conference Attendees: Economic Downturn Yields Bottom-Line Benefits for IT

Vendors now ready to deal; jobs easier to fill

BY PATRICK THIBODEAU
SAN DIEGO

Continued economic uncertainty is bringing IT managers some welcome benefits, including lower prices from technology vendors and more success in filling critical positions on their staffs.

And many top corporate executives "do not believe that we are anywhere close to being in a recovery," despite efforts by sales-hungry vendors to convince them that an economic rebound is under way, according to Michael Fleisher, chairman and CEO of Gartner Inc. in Stamford, Conn.

"I think it's a mistake to try to cheerlead our way to a recovery, which is exactly what people in the tech industry have been doing for the last several months," said Fleisher, speaking last week at Gartner's Symposium/ITxpo 2002 conference here. He added that this year will remain "a tough environment" for companies.

Silver Linings

That may be bad news for corporate bottom lines. But some IT managers interviewed at the conference said that the downturn has helped them in important ways.

"Vendors have been extremely negotiable in price" this year compared with what they were trying to charge a year ago, said Lisa Skinner, assistant vice president for emerging technologies at Pacific Life Insurance Co. in Newport Beach, Calif. Skinner said she has seen dramatic decreases in the prices vendors are offering on both software and hardware.

But there have been problems, too, she said, noting that some of the vendor start-ups that Pacific Life took a risk on have failed. But fortunately, Skinner said, those companies were acquired by other vendors, and the insurer has continued to receive technical support services.

The experience underscored the need "to have a fallback strategy if you need to move from one technology to another," Skinner cautioned. It's also critical to keep an eye on the health of vendors, she said.

Alan Werckle, IT professional resources director at Compassion International, a nonprofit child assistance organization in Colorado Springs that receives about $130 million annually in donations, said the downturn has also prompted consultants to drop their fees.

> Vendors have been extremely negotiable in price [this year].
>
> LISA SKINNER, ASSISTANT VICE PRESIDENT, PACIFIC LIFE

Compassion International recently hired a Web developer on a contract basis for $50 per hour. Last year, the going rate for the same position was $90 per hour, Werckle said. Three weeks after bringing the developer on board, officials at the nonprofit decided he was worth holding on to and raised his hourly fee to $75. "It's been great for us," Werckle said.

Dennis Walsh, who manages the distributed systems group at Washington Mutual Inc., a Seattle-based bank, agreed that it's easier to get better deals now. "But I'm not sure how much the economy has to do with it, and how much it has to do [with the fact] that we've just been more focused on doing that," he said.

PLAYING HARDBALL

Patricia Keefe offers her take on how to deal with vendors in today's tight economy:

QuickLink: 28882
www.computerworld.com

Users Eye Start-ups With Caution

SAN DIEGO

These are tough times for technology vendors in general, but particularly for start-ups seeking a foothold in corporate environments. Some IT managers who were already wary of such companies said at Gartner's Symposium/ITxpo 2002 conference here that they're being even more cautious now.

Start-ups indicated that they're feeling the pain. Users are "less willing to distinguish themselves by pushing the envelope," said Jackie Gilbert, vice president of marketing at Journee Software Corp., an Austin, Texas-based developer of data integration technology that was one of 10 start-ups picked by Gartner for a spotlight position on the expo floor.

The business prospects for many start-ups aren't good. Based on historical patterns, about 80% aren't likely to survive long term, said Gartner analyst Ken Dulaney.

IT managers agreed that taking a chance on an emerging company can be a big risk. But there are still valid reasons for considering start-ups, some conference attendees said. "Maybe they have a really compelling case for a product or service that you need," said Charles Benedict, senior vice president and chief technical officer at Countrywide Insurance Services Inc. in Simi Valley, Calif. A hungry company that "seems to match where you're trying to go" may also give you more attention than larger vendors do, he said.

Terry Keith, director of management services enterprise technology solutions at Universal Underwriters Group in Overland Park, Kan., said start-ups often offer less-expensive ways to solve business problems. Still, Keith said he would move cautiously in dealing with one. Universal Underwriters would initially use such a company's technology for a pilot project. "We would . . . try it. Watch it closely. See what we get out of it," Keith said.

But Todd Duran, manager of enterprise architecture at Gordon Food Service, a food distributor in Grand Rapids, Mich., said he wouldn't consider a start-up at all. "Most of the time, they would be expecting us to take all the risk," he said.

Dulaney said companies can do a number of things to protect themselves in case a start-up fails, such as setting up source-code escrow agreements and including nonperformance clauses in contracts. But users may have to cut their ties with struggling start-ups, Dulaney advised. Companies often "keep working with the vendor, hoping it will get better," he said, noting that in many cases, it never does.

– Patrick Thibodeau

Microsoft Claims Unbundling Windows Would Hurt Users

Testimony raises fragmentation issue

BY MITCH BETTS
WASHINGTON

Microsoft Corp. — as if channeling through its courtroom witnesses — continued to argue last week that antitrust penalties tougher than those of last year's settlement would be unworkable and onerous.

MIT professor Stuart Madnick, for example, testified in U.S. District Court that removing browser-related code from Windows isn't feasible because it's scattered throughout the operating system. The pro-Microsoft witness likened Windows to "a house of cards" that could fall if code is removed.

Nine states and the District of Columbia are urging the court to impose stiffer penalties to restore competition, such as letting PC makers remove Internet Explorer and other portions of Windows and substitute rival software.

Users would suffer from myriad hardware and software incompatibilities if Windows licensees were allowed to remove pieces of the operating system, testified Microsoft's Robert Short, vice president of Windows core technology. Licensees might even leave out certain printer drivers, he warned, thus ruining users' plug-and-play expectations.

Common Defense

Microsoft is trying to "raise the specter of fragmentation" stemming from having multiple versions of Windows, said Robert Lande, an antitrust professor at the University of Baltimore School of Law. But monopolies always trot out the benefits of uniformity, he said. "What some people call fragmentation, other people call competition where you let consumers decide," Lande said.

Tom Greene, California's assistant attorney general and one of the state officials pressing for tougher sanctions, said Microsoft's Internet Explorer should be made available to the software industry as a "public utility" because its dominant market share was obtained illegally.

Lande agreed, noting that the U.S. Court of Appeals expressly told the lower court that Microsoft should be deprived of the fruits of its illegal conduct.

IDG News Service correspondent Cara Garretson contributed to this story.

COURT REPORT

For complete *Computerworld* coverage of the Microsoft antitrust trial, visit:

QuickLink: s1100
www.computerworld.com

Microsoft Details Software Systems Management Plans

But some users say they want quicker fixes to pressing issues like remote management

BY CAROL SLIWA
LAS VEGAS

MICROSOFT. CORP. last week detailed plans for its software systems management products that are expected to surface during the next three to five years.

The strategy is two-pronged: The client manager project, in part, calls for the company to build into its products a set of standard processes for addressing common management scenarios. The server manager project will largely focus on service management issues, such as guaranteeing a certain level of uptime or timely message delivery.

But while Microsoft is putting more emphasis on systems management, some users bemoan the software maker's lag in improving its products with key features, such as remote management, and question the vendor's long-term potential to excel, given its continued Windows-only focus.

'World Is Not Microsoft-Centric'

Edward Aldrich, an information systems architect at CVS Corp. in Woonsocket, R.I., said the pharmacy chain is deploying a multiplatform enterprise management system from IBM's Tivoli Systems Inc. He said the decision was made before Microsoft Operations Manager (MOM) came out, but he noted that many large companies, including CVS, have mixed environments and like to have management products that work across both Unix and Microsoft platforms.

"Microsoft continues to get more serious about management every year, but the problem is the world is not Microsoft-centric, and Microsoft is," said Ronni Colville, an analyst at Gartner Inc. in Stamford, Conn. "They have good ideas for fixing the Microsoft problems, but they have those blinders on, and they only see the Microsoft problems."

Microsoft defends its single-platform focus, saying it has no expertise to build products that manage other vendors' software. David Hamilton, director of Microsoft's management business group, said that when the company licensed software from NetIQ Corp. to build its MOM product, it essentially rewrote the piece that manages Exchange Server.

"I don't believe one company can solve all management needs," he said, noting that Microsoft has no plans to change its Windows-only approach.

Despite the Windows-centric strategy, Gartner analyst Cameron Haight predicted that Microsoft will crack management's Big Four: BMC Software Inc., Computer Associates International Inc., Hewlett-Packard Co. and Tivoli.

Haight said users take a best-of-breed approach to management to get greater return more quickly. Implementations with the Big Four management vendors can take many years and still not solve all problems.

Integration Plans

Lee Jarvie, a senior technical specialist at a retail chain that he declined to name, said that while he's generally happy with Microsoft's management products, he would like to see better integration among its three offerings: Systems Management Server (SMS), Application Center and MOM.

Hamilton said Microsoft plans to better integrate the products so that they use the same infrastructure, schema, database and user interface, but he didn't say when.

"[Microsoft has] been very conservative in their approach to management," said Rick Sturm, president of Enterprise Management Associates Inc. in Boulder, Colo. "They've tended to lag [behind] the market. However, with this latest mobile [device focus], they're getting out there and anticipating the need."

Mark Beery, a consultant for Towson, Md.-based Ajilon Inc., said the large oil company for which he consults needed remote PC and laptop management capabilities sooner than Microsoft delivered them. He said the features now due for release in 2003 were originally promised in 2001, and "even that was too late."

Hamilton disputed the notion that Microsoft has lagged in its management products.

This summer, Microsoft will start delivering on its vision with the release of process documentation to help walk users through management scenarios to deliver security pouches, roll out complex Windows applications and monitor distributed application such as Exchange Server. ◗

AT A GLANCE

Timeline

Red-letter dates in Microsoft's systems management history:

1994: Enters management market with first release of Systems Management Server (SMS) for managing PCs

1995: Acquires U.K.-based Network Managers Ltd. for network expertise

1998: Releases SMS 2.0

Oct. 2000: Announces deal to license software from NetIQ

Feb. 2001: Launches Application Center 2000 for managing Web server farms

July 2001: Introduces Microsoft Operations Manager, which is based on technology acquired from NetIQ

2003: SMS 3.0 due to be released

Microsoft Tackles Management of Handheld Devices

LAS VEGAS

While personal digital assistants (PDA) and other wireless devices have been steadily making their way into corporations, the need to manage them still hasn't hit the radar screens of many IT managers.

Microsoft made its pitch to try to change that last week at its Management Summit 2002 event here. It announced a new feature to an upcoming version of its Systems Management Server (SMS) that will enable IT managers to manage software inventory and delivery to non-PC Windows devices.

"Hardly anybody has it under control," said Rick Sturm, president of analyst firm Enterprise Management Associates.

Ben Silverstein, an IT manager at Johns Hopkins University's Applied Physics Laboratory in Laurel, Md., said users who own Palm Inc. PalmPilot or Compaq Computer Corp. iPaq devices want to be able to check their e-mail with them. "We do have to support the little devices, which are in fact part of the network, whether we like it or not," he said, noting that mobile PC users now check their e-mail through a virtual private network (VPN), but his vendors have yet to publish a VPN client for PDAs.

Microsoft's SMS 2003

FEATURES WILL INCLUDE:

- **Enhanced support for remote PCs**
- **Tight Active Directory integration**
- **Support for non-PC Windows devices**

One IT manager at an insurance firm, who asked not to be identified, said his company manually manages wireless devices, which are primarily PalmPilots, so it would help to have a product to assist with the effort.

But even though the insurance company uses SMS, it might have to consider other options because the new feature in Microsoft's SMS software will only support devices that run Windows CE, Windows-powered Pocket PC software or Windows XP Embedded.

David Hamilton, director of Microsoft's management business group, said the new feature is being added due to customer feedback from some of the 60 early adopters who have been testing a preview version of SMS 2003, formerly code-named Topaz. "The Pocket PC has connectivity into the network, and they want to make sure there isn't anything [that's not secure] in that environment," he said.

Some other companies, such as Altiris, already support the management of wirelessly connected non-PC devices. But Sturm said Microsoft's announcement is significant because no major vendor has yet dominated that market.

Other previously announced new features in the upcoming SMS 2003 include the ability to manage and distribute software to PCs used by remote workers who dial into the network and tighter integration with Microsoft's Active Directory, Hamilton said.

Those remote capabilities will be a welcome addition for users who have struggled to use SMS for remote laptops. Sean Lewis, a senior systems administrator at a Florida retailer, said the current version of SMS can be used, but it expects a high-speed connection. "It's not portable-friendly," he said.

A beta version of SMS 2003 is due midsummer, with the final version expected before the end of June 2003, Hamilton said.

– Carol Sliwa

MORE NEW TOOLS

Two firms have announced new tools to help users with remote management of PDAs. Visit our Web site for the story.

QuickLink: 28480
www.computerworld.com

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Airline Gets Storage Over IP on the Cheap

Mesaba's $250k disaster recovery system would have cost millions a few years ago

BY LUCAS MEARIAN

IN WHAT ANALYSTS are calling a relatively unique implementation, Mesaba Aviation Inc. recently went live with a storage over IP network for disaster recovery and business continuity. The network, which just a few years ago would have cost millions of dollars to install, cost Mesaba just $250,000.

The airline's implementation is one of the first storage over IP projects outside the financial services industry. "This is disaster recovery for the masses. How do you not take that type of insurance out?" said Steve Duplessie, an analyst at The Enterprise Storage Group Inc. in Milford, Mass.

Minneapolis-based Mesaba said it chose Internet Fibre Channel Protocol (iFCP) from among several protocols for transferring block-level data over IP because it was the most flexible. The airline's data center, which is located at Minneapolis International Airport, is scheduled to be relocated in the near future, but a permanent site has yet to be determined. Mesaba is currently transferring data to a disaster recovery site about 20 miles away, in Eagan, Minn.

Multimillion-Dollar Net

Edward Jones & Co., in Maryland Heights, Mo., announced in December plans to build a storage over IP network that would span 1,500 miles [QuickLink: 25699].

The difference between Mesaba's implementation and Edward Jones' is that the latter is expected to cost $60 million to $80 million and makes use of Fibre Channel over IP, a tunneling technology that connects two Fibre Channel storage-area networks (SAN). Edward Jones' implementation will also support a 90TB SAN, vs. Mesaba's 6I2GB SAN.

By using iFCP, the company can mirror to any location it chooses to set up on a Synchronous Optical Network (Sonet).

Although planning for the project started about a year ago, Mesaba information systems department manager Randall Witt said getting funding for disaster recovery became far easier after the Sept. 11 attacks.

"It's just an insurance policy. Hopefully, we will never have to use it," Witt said. "With any [systems] outage, the first hour might cause flight delays, but [by the] second or third hour you're down, you're beginning to cancel [flights]. You're losing hundreds of thousands of dollars. If you go over that, you are losing millions."

WITT: Disaster recovery system could help avoid millions in losses.

Mesaba, a regional carrier for Northwest Airlines Inc. in Minneapolis, is using a shared OC3 link on a Sonet ring to mirror information between data centers in Minneapolis and Eagan. The company is paying $6,800 per month for the OC3 link.

According to Witt, there was no one to provide dark fiber to the disaster recovery facility in Eagan. In addition, "we were told by an independent consultant that to run this fiber ourselves, it would have cost over $150,000 for the fiber alone," he said.

Mesaba, which handles up to 700 flights per day, went live with the network in late March. The system mirrors 30GB of data related to its flight crews and airplane tracking system, which includes parts inventory.

"That's just critical data, but as we start mirroring our [enterprise resource planning] solution and Oracle databases, it will probably have to be a fatter pipe to take on that threshold," Witt said.

Mesaba is using two Fibre Channel/IP switches from San Jose-based Nishan Systems Inc. and two prefabricated SANs from XIOtech Corp. in Eden Prairie, Minn. XIOtech's Magnitude SANs are built as one centralized configuration that includes a storage controller, management software and up to 64 disk drives, or 11.5 TB of storage. XIOtech's software aggregates all physical drive spindles within the SAN into one virtual pool.

The network can transfer data at 75M bit/sec. on the shared OC3 (155M bit/sec. total), but Nishan officials said bandwidth can easily be scaled by carving up each physical switch port into 16 channels using dense wavelength division multiplexing. Each channel can be programmed to support IP or Asynchronous Transfer Mode over Sonet. ◗

PeopleSoft Pushes CRM, Supply Chain Software

BY MARC L. SONGINI
LAS VEGAS

PeopleSoft Inc. last week released two new supply chain management applications and detailed plans to ship four vertical-industry versions of its customer relationship management (CRM) software, continuing its effort to beef up its presence in those markets.

The company has been making a big CRM push since June, when it rolled out a suite of Web-based sales, marketing and service tools. With last week's announcements at its PeopleSoft Leadership Summit 2002 conference here (see box), the company tried to give its supply chain software the same kind of jump-start.

But analysts said that to date, the Pleasanton, Calif.-based software vendor's ventures into CRM and supply chain technology have been something of a mixed bag.

Steve Bonadio, an analyst at Meta Group Inc. in Stamford, Conn., said he thinks PeopleSoft has made itself the clear No. 2 CRM suite vendor from a technology and product positioning standpoint, behind only San Mateo, Calif.-based Siebel Systems Inc.

A recent convert to PeopleSoft is the Texas Education Agency. William Monroe, chief of operations at the $15 billion Austin-based agency, said at the conference that the agency plans to install PeopleSoft's CRM software to manage complaints from parents and teachers and monitor school systems that appear to have a high incidence of problems.

However, the situation is different on the supply chain side. Although PeopleSoft boasted last week that 50 users went live with its supply chain software last quarter, some analysts said its product offerings still have shortcomings.

Jill Jenkins, an analyst at Current Analysis Inc. in Sterling, Va., said in a report that last week's supply chain announcements were "mostly marketing hype." Even with the new functionality, it's unlikely that PeopleSoft will see a big increase in sales beyond its installed base, Jenkins said.

"We're primarily known as a human resources company," acknowledged Mike Franzen, general manager of supply chain products at PeopleSoft. But he said that about 1,700 companies use at least one of PeopleSoft's supply chain tools. In addition to developing the new modules, PeopleSoft this year formed a supply chain sales force and plans to market the software more aggressively, Franzen said.

One satisfied supply chain user is Erlanger, Ky.-based Toyota Motor Manufacturing North America Inc., which has been using the PeopleSoft 7.5 order management, inventory and purchasing modules since 1999 to manage parts ordering and shipping processes.

Some of the customized code used in the implementation may find its way into future releases of PeopleSoft's applications, said Jim Bolte, vice president of information systems at Toyota Motor. But Bolte said he wants PeopleSoft to increase its presence in Europe and Asia as Toyota rolls out the software globally. PeopleSoft has agreed to do so, he said. ◗

Now Available

PeopleSoft announced the following products last week:

SUPPLY CHAIN

- **A strategic sourcing module** that creates contracts and purchase orders and analyzes the performance of suppliers
- **Trading partner management software** that provides a single interface for interacting electronically with suppliers

CRM

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HUMAN RESOURCES

- **Separate applications for managing incentive payment** programs, employee performance and corporate training

'CONNECTED ENTERPRISE'?

PeopleSoft's real-time data integration pitch gets a mixed reaction from users.

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Users Beginning to Consider StarOffice

Companies are looking for an alternative to Microsoft's enterprise licensing plan

BY PATRICK THIBODEAU
SAN DIEGO

END-USER UNREST over Microsoft Corp.'s enterprise licensing plan may prompt some companies to move from the Microsoft Office suite to rival Sun Microsystems Inc.'s personal productivity suite, StarOffice, according to Gartner Inc.

Stamford, Conn.-based Gartner estimates that StarOffice has a better-than-even chance of taking 10% of the office productivity suite market — at Microsoft's expense — by the end of 2004.

Michael Silver, a Gartner analyst, said some firms are beginning to weigh the cost and licensing terms of Microsoft's Office against StarOffice's improving compatibility with Microsoft file formats and its expected lower pricing.

Sun intends to begin charging for StarOffice when Version 6.0 is released by the end of next month, but it will couple that with support services. Pricing hasn't been announced, but a Sun official said Gartner's estimate of $25 to $75 per user, depending on volume, is in the ballpark. The move is a strategic one for Sun, which had previously made StarOffice available for free but with minimal support.

Microsoft declined to disclose its enterprise volume license pricing.

"StarOffice has a chance, based on [improved] compatibility, some mind share and Microsoft missteps," said Silver. But concerns about migration costs, end-user training and converting documents could deter companies, he said.

Gartner's prediction of a potential 10% market share for StarOffice may seem small, but it's likely the boldest prediction to date of a product with the potential to dent Microsoft's desktop market share. Still, the hurdles for reaching that market could be high.

David Morris, a senior vice president of e-business solutions at AmeriCredit Corp. in Fort Worth, Texas, is among those who have downloaded StarOffice for a tryout. He called it "a pretty good product" but said he's not about to roll it out to his 6,000 users.

The training and infrastructure costs associated with moving end users to a new productivity suite pose too big a barrier, said Morris. "We don't think there are viable alternatives [to Office]," he said.

But another end user attending the Gartner Symposium/ITxpo here disagreed. Mike Thiele, associate director of corporate IT infrastructure at Gilead Sciences Inc., a biopharmaceutical firm in Foster City, Calif., said his company is looking at alternatives to Office, partly because it doesn't want to rely on one vendor.

StarOffice has about 10 million users worldwide. Its largest enterprise user is Sun, at 39,000 seats, followed by the U.S. Department of Defense, with 15,000 users, according to Tony Siress, a senior director of marketing at Sun. The change to a pricing model is intended to let users know that StarOffice is "a committed, sustainable offering," he said.

Microsoft's new enterprise licensing plan, announced last year, drew complaints from many firms, which said it would raise their costs.

Gordon Pope, manager of network computing at the British Columbia Hydro and Power Authority in Vancouver, said those licensing changes have raised concerns. "Would I look to find alternatives to Microsoft? Absolutely," said Pope. "The concern that we have is [that] the weirdness of the licensing is costing us a lot of money every couple of years."

Pros and Cons of a Move to StarOffice

FOR MIGRATION: May appeal to users who don't need Office's advanced features on every desktop. According to Gartner, it will cost less, but Microsoft isn't releasing its volume pricing data and Sun hasn't set its price yet.

AGAINST MIGRATION: Training costs; application migration issues; StarOffice doesn't handle macros well.

IIS Usage May Not Be as High as Survey Says

Numbers may have actually gone down

BY CAROL SLIWA

Any corporate IT users who turn to Netcraft Ltd.'s popular Web server market-share surveys to assist in making product decisions need to be cautious when they check out recent results.

The British Internet consultancy's March survey showed that usage of Microsoft Corp.'s Internet Information Server (IIS) spiked upward from February to March. Yet other Netcraft statistics and other publicly available data suggest that overall IIS usage actually may have declined during that same time frame (see chart).

Microsoft lead product manager Janet Smith disputed the notion that IIS usage has dipped, citing confidential customer surveys that she declined to release.

But even Smith acknowledged that the Netcraft survey showing the IIS market share spike isn't the most accurate indicator of usage. She emphasized the need to understand the methodology that polling firms use to collect data.

One Netcraft survey polls all unique host names of which Netcraft is aware — including "domain parking facilities," which essentially are idle placeholder pages for future Web sites. The other polls active servers.

In March, New York-based Register.com, one of the leading domain name registries, moved well over 1 million of those future sites from open-source Apache Web servers to Microsoft's IIS. That helped to push Microsoft's IIS market share up 5% while Apache dipped 5%.

Netcraft Internet consultant Magnus Huckvale said Register.com had 1.9 million sites running on Apache and 55,000 running on IIS in February. Those numbers shifted to 1.7 million sites on IIS and 1,500 on Apache in March, he said.

Walt Meffert, who became Register.com's chief technology officer last November, said there was "nothing wrong" with his firm's Apache-Linux combination. He said he made the change as part of a review of his firm's architecture.

"This is a way to evaluate the Microsoft technologies," Meffert said. He said he reserves the right to change his mind if issues arise, but he views IIS as his firm's "planned direction."

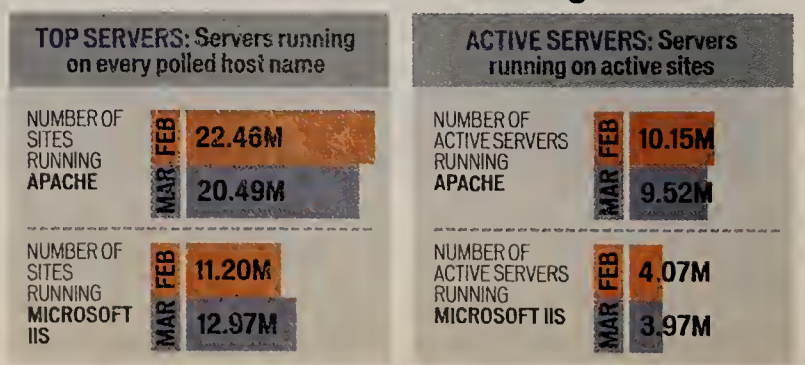
Asked if he had a deal with Microsoft to switch to IIS, Meffert said, "It's premature to comment on any specific talks with Microsoft or any long-term relationship that may or may not come to fruition."

Told that suspicious minds may wonder if Microsoft is seeking out firms such as his to try to boost its ranking with popular polling engines, Meffert said, "I would say that would be a good strategy."

Huckvale said he thinks Register.com is the sort of firm that Microsoft is targeting. "It would certainly be intelligent for them to do that, in terms of increasing the share," he said.

Smith insisted that isn't Microsoft's motivation for trying to convert "influential members of the Web community" to IIS, although she acknowledged that her company is aware that such pursuits may help raise Microsoft's presence in surveys. "We prioritize how we focus our efforts, and larger customers are always of interest to us," she said.

Two Views of Web Server Usage



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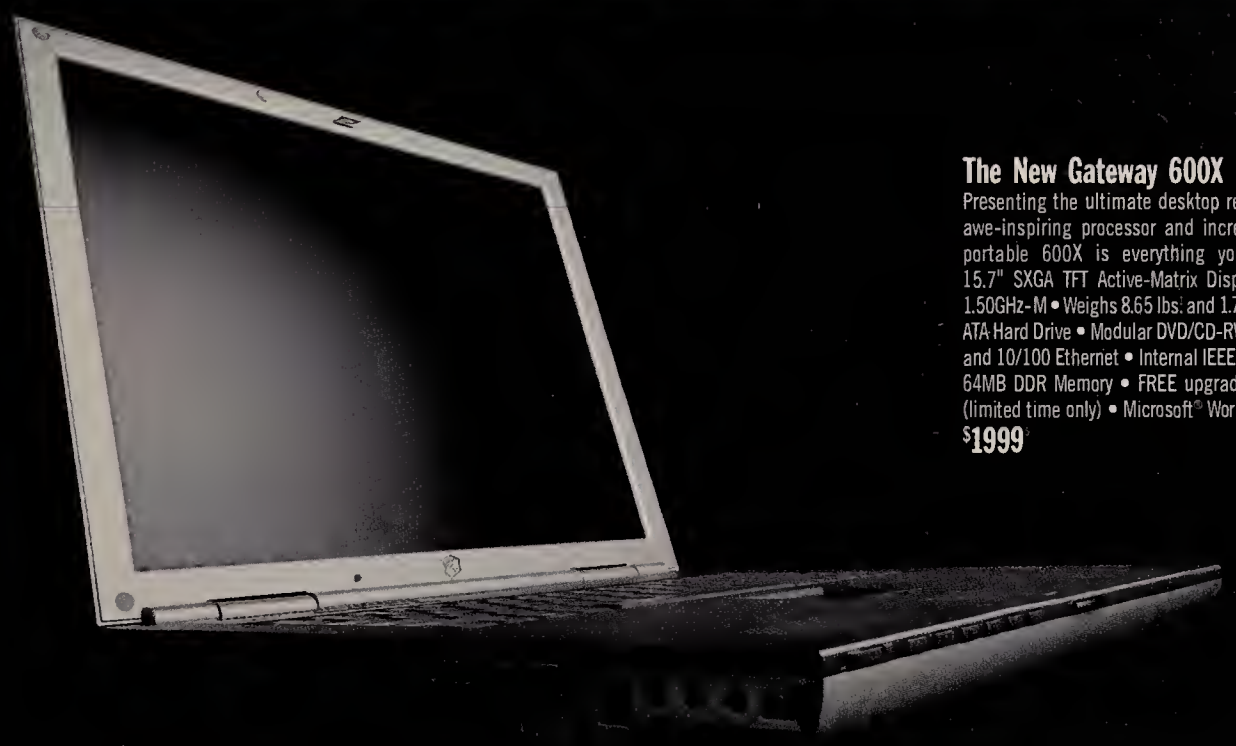

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BRIEFS

State Street Makes IT Layoff Plans

State Street Corp., a Boston-based financial services firm, announced plans to lay off about 375 employees, most of whom work in its IT support and services operations. The company currently employs about 3,000 IT workers. A spokeswoman said that State Street does not expect to cancel any technology projects or move toward IT outsourcing as a result of the cutbacks.

Melissa Virus Author Gets 20 Months

The programmer who created and unleashed the Melissa virus three years ago was sentenced to 20 months in federal prison after pleading guilty in U.S. District Court in New Jersey. David L. Smith, 33, of Aberdeen, N.J., faced up to five years in prison. As part of his guilty plea, Smith and federal prosecutors agreed that the virus caused more than $80 million worth of damage.

CERT Warns of Solaris Vulnerability

The CERT Coordination Center at Carnegie Mellon University in Pittsburgh warned that a format-string vulnerability in a utility in Sun Microsystems Inc.'s Solaris operating system could be used by attackers to execute code on unprotected systems. Sun confirmed the existence of the flaw and said it is developing patches. It added that the hole is hard to exploit.

Short Takes

Linden, Utah-based CALDERA INTERNATIONAL INC., which markets Linux and Unix operating systems, said it will offer support services on five rival Linux distributions. . . . Honorio Padron resigned as CIO at Chicago-based EXELON CORP., where he was also president of a unit that provided IT support to the company's businesses.

IT Managers Turn To eBay to Cut Costs

Presence at N+I points to online auction site's increasing networking device sales

BY MICHAEL MEEHAN

TRAPPED in budgetary handcuffs, IT managers are increasingly turning to an unlikely source in an effort to find bargain-priced networking equipment: eBay.

As evidence of the San Jose-based company's rapid rise to prominence in the market for used routers, switches and other devices, eBay Inc. President Maynard Webb will be one of the keynote speakers at this week's Networld+Interop conference in Las Vegas. This will be eBay's first appearance at N+I, but Todd Lutwak, director of the company's IT marketplace, said eBay plans to become a regular attendee of the show from now on.

Lutwak said eBay expects to sell more than $1 billion worth of IT products this year (see chart). And networking gear is becoming a big draw for users: Gross merchandise sales of networking devices through the company's Web site jumped 141% last year, Lutwak said.

Etienne Handman, chief technology officer at Dublin, Calif.-based online loan company E-Loan Inc., said he turned heavily to secondary equipment markets last year to contain costs and scored big on his eBay purchases. "When we crunched the numbers for 2001, we averaged [paying] 21 cents on the dollar for the stuff we bought on eBay," he said.

The networking products Handman purchased via eBay included routers and switches made by Cisco Systems Inc. and 3Com Corp., plus firewall software developed by Check Point Software Technologies Ltd. and installed on Sun Microsystems Inc. servers.

EBay "has done wonders for the used-equipment market," said Zeus Kerravala, an analyst at The Yankee Group in Boston. "They've become one of the largest network equipment distributors out there in a short [period of] time."

Kerravala noted that eBay and other used-equipment outlets such as Micro Warehouse Inc. in Norwalk, Conn., have cut prices on network equipment to just a few percentage points above wholesale levels.

Some networking vendors have even begun to sell new and refurbished products through eBay's site. In February, for example, Santa Clara, Calif.-based Netgear Inc. debuted its latest wireless LAN product on the eBay exchange.

But Bill Flanagan, an analyst at Burton Group Inc. in Sterling, Va., said eBay still has a long way to go before it can become an established supplier to most large IT departments that have strong business relationships with vendors.

"If you rely too much on auctions, your costs aren't predictable, and your supply definitely isn't predictable, and that probably isn't going to appeal to major enterprises," Flanagan said.

Handman said all the equipment he has bought via eBay has been name-brand and he only once received damaged goods, which were covered by the seller's insurance policy. ◗

E-BAY'S IT EQUIPMENT AUCTION STATISTICS

200,000	25,000	$1.4 billion
or more IT items on average are up for sale each day, and more than 20,000 of them are sold daily.	products in the networking category are typically available, and 1,500 items are sold on a daily basis.	in total IT-related sales is projected by the company this year, based on its first-quarter results.

VOIP ATTRACTS ATTENTION

Voice over IP technology is expected to be a hot topic at N+I. Read about it online.

QuickLink: 29492
www.computerworld.com

IBM Tweaks Workload License Pricing

Large users get biggest price cuts

BY JAIKUMAR VIJAYAN

IBM last week dropped prices on its z/OS mainframe software by up to 30% for certain categories of users and introduced changes to its Workload License Charge (WLC) model in response to long-standing user demands.

Effective July 1, corporations with very large mainframe installations will pay 30% less when incrementing their z/OS software beyond 5,000 MIPS. Also, those with more than 3,300 MIPS will see z/OS-related middleware prices rolled back by 20%, said Peter McCaffrey, a director with IBM's zSeries group.

IBM is also altering its WLC software pricing model. One significant shift changes the way z/OS workloads are measured for pricing purposes.

Under the existing model, users must define the system capacity they think they will require to run a particular workload. Usage is then measured using a four-hour rolling average. Users in general have said that they like the approach and that it is far more equitable than previous capacity models, in which users paid for software based on the overall size of the system.

However, a problem occurs if the average usage in a four-hour period exceeds the licensed capacity. The result can be performance degradations and unwanted software bills.

z/OS Alterations

- z/OS upgrade price cuts of up to 30% for very large MIPS systems
- z/OS middleware price cuts of up to 20% for some systems
- 16 new z900 server models featuring new chips that deliver up to 20% greater performance than current systems
- A new option called Customer Initiated Upgrade aimed at making it easier for customers to upgrade capacity

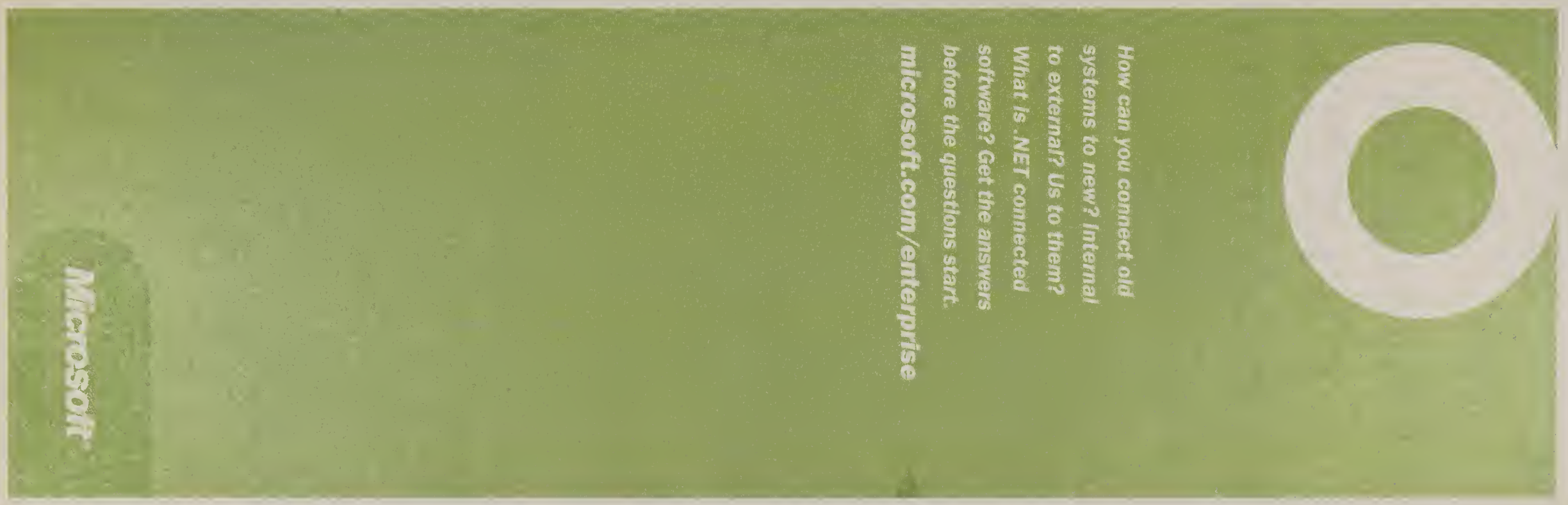
"Further, there were many installations where the sum of the defined capacities was larger than the size of the machine," said Al Sherkow, president of I/S Management Strategies Ltd., a mainframe consultancy in Whitefish Bay, Wis.

In such cases, pricing was based on the overall size of the machine, resulting in no cost savings, Sherkow said.

Under the new pricing model, users won't have to define any capacity initially but will be charged based on actual average use over a four-hour period. But users can still opt for a defined-capacity model, McCaffrey said.

Most of the pricing benefits are clearly aimed only at large users, said Mike Kahn, an analyst at The Clipper Group Inc. in Wellesley, Mass.

"IBM is trying to grow their business by delivering the biggest benefits to their biggest [mainframe] customers," Kahn said. ◗



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Warning on Cyberattack 'Exaggerated'

CIA report on Chinese information warfare plans off the mark, say experts

BY DAN VERTON

IT'S NO SECRET. In addition to the U.S., at least six countries are known to be actively developing information warfare programs designed to cripple the IT, economic and military infrastructure of their potential adversaries.

However, a classified CIA warning, which detailed China's plans to launch cyberattacks against U.S. business and military networks and was made public late last month, grossly misrepresents the threat to those responsible for protecting government and private IT networks in the U.S., experts said last week.

"China is developing a cyberattack capability, but it appears it is a component of their overall military strategy, to be used in case of [conventional] war," said Vince Cannistraro, former director of counterintelligence at the CIA.

Although experts agree that other nations and even terrorist groups are researching cheap and easy ways to use IT to offset the U.S.'s conventional military might, they say most reports have exaggerated the threat. Information warfare isn't something that's launched without plans for a conventional war, and terrorists have shown little interest in the bloodless outcome of cyberattacks, said Eric Shaw, a former CIA clinical psychologist and profiler.

Shaw and Cannistraro both said that most countries with cyberarsenals are unwilling to risk a conventional U.S. military strike in retaliation for a cyberattack that cripples IT infrastructure and threatens the health and stability of the economy. In addition, most terrorist groups see little value in bloodless attacks, they said.

"Al-Qaeda views the Internet as a method of communication, not as an avenue to carry out terrorism," Cannistraro said. "It isn't bloody."

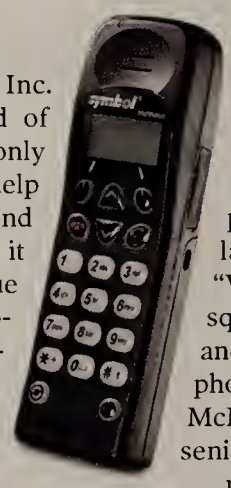
"Considering all possible threats is a nice, creative process, but there is little evidence to suggest its practical benefit, other than funding of security-related projects that may not be needed," said Shaw. "So, in many ways, it wastes resources." ◗

Wholesale Retailer Melds Wireless LANs With VOIP

BJ's incorporates IP phones to improve customer service

BY BOB BREWIN

BJ's Wholesale Club Inc. has installed the kind of wireless LAN commonly used by retailers to help manage inventory and price verification. But it has added some unique twists, including support for wireless voice-over-IP (VOIP) phones and wireless scales.



SYMBOL'S VOIP wireless phone

Tom McMahon, vice president and manager of system services at Natick, Mass.-based BJ's, said the company completed installation of wireless LANs at all 131 of its stores last month. It decided to integrate wireless IP phones into the system as a means of enabling store managers to improve customer service.

"We want our [store] managers on the floor and not sitting behind a desk," McMahon said.

BJ's tried using cordless phones, whose base units plug into a standard phone line, but they lack sufficient range. "We have 115,000-square-foot buildings, and 900-MHz cordless phones just don't work," McMahon said. Initially, senior store managers will receive the VOIP phones; the rollout will possibly be extended to managers of departments such as the bakery in the future.

BJ's has installed 802.11b wireless LANs from Holtsville, N.Y.-based Symbol Technologies Inc. McMahon said four access points operating in the 2.4-GHz band are needed to completely cover each store. These LANs provide the links for bar code scanners and the phones, as well as wireless scales the company has installed in meat departments. McMahon said BJ's is also in the process of evaluating a Symbol wireless LAN system with Kerberos security built in.

Gemma Paulo, an analyst at In-Stat/MDR in Scottsdale, Ariz., said adding a VOIP wireless phone to a network is a challenge.

Data networks that support VOIP need to be configured to ensure that the packets that carry a phone conversation get priority over data packets — a difficult process, Paulo said. Wireless IP phone technology is also immature and expensive, she added, noting that only two vendors — Symbol and Boulder, Colo.-based Spectra Link Corp. — currently offer the phones. They cost about $700 each, she said. ◗

Continued from page 1

Retail Breach

Don Harris, a Home Depot spokesman, declined to say whether the company had turned off its wireless LAN in the San Jose store.

Spokeswoman Jennifer Bohuslavsky said Eden Prairie, Minn.-based Best Buy on May 1 deactivated its "wireless temporary cash registers," which transmit information via a wireless LAN connection. "These registers are not Best Buy's main register terminals and represent a small percentage of our transactions," she said.

Bohuslavsky declined to provide any security or deployment details on the wireless network used by Best Buy throughout its 480 stores.

Dave Ellis, vice president for information systems at Atlanta-based Home Depot, sharply denied a published report that hackers had captured data from wireless point-of-sale terminals or cash registers in any of the company's 1,200-plus stores. "That dog does not hunt," Ellis said. "All our registers are hardwired."

Ellis declined to discuss Home Depot's wireless LAN security or whether white-hat hackers could have penetrated its wireless network.

John Pescatore, an analyst at Gartner Inc., said the fact that someone was able to sniff data from a Best Buy wireless LAN indicated to him that the company hadn't turned on the simplest form of security available on any 802.11b wireless LAN: encryption based on the Wired Equivalent Privacy (WEP) protocol. Not turning on WEP is "just stupid," Pescatore said.

Dennis Eaton, chairman of the Wireless Ethernet Compatibility Alliance, a wireless LAN industry group in Mountain View, Calif., said that, in fact, most users fail to turn on WEP, despite widespread publicity about the inherent lack of security in wireless LANs.

Rick Doten, a program manager at security consultant NetSec Inc. in Herndon, Va., said that only 30% to 40% of enterprises turn on WEP, though some companies run more powerful forms of encryption.

Pescatore said enterprises also routinely fail to change the factory-default Service Set Identifier (SSID) on their wireless LAN access points. Access points broadcast the SSID in packet headers so access cards in PCs or handheld computers can find the LAN.

Doten said the failure to properly secure wireless LANs is being exploited by what he called wireless LAN "war drivers" who use freeware tools such as NetStumbler to locate access points.

Wayne Slavin, the San Diego-based founder and webmaster of Netstumbler.com, said there have been more than 200,000 downloads of the company's software. He said that to date he has identified over 25,000 access points in the U.S. and Canada, with more than 80% broadcasting in the clear. "[That's] a pretty scary statistic," Slavin said. ◗

WAR DRIVERS

NetStumbler software makes sniffing easy.

QuickLink: 29498
www.computerworld.com

Wireless LAN Security Checklist

1. Use dynamic, per-session WEP keys and change factory-default SSIDs.
2. Use device-independent authentication so that lost or stolen devices can't gain access to the WLAN.
3. Audit your WLAN with sniffer products to locate "rogue" access points installed by employees.
4. Centralize all wireless network management.
5. Consider a VPN-based access strategy.

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EMC Offers Disk Array as Tape Alternative

BY LUCAS MEARIAN

EMC Corp., continuing to look for ways to jump-start its sales, last week announced a relatively inexpensive disk array for storing fixed data, such as check images, software source code and medical X-rays. Prospective users said the device could provide a speedier alternative to tape storage.

List prices on the Centera array start at $101,500 for a 5TB system plus $103,200 for companion storage management software. Analysts said that puts the price of Centera at about 2 cents per megabyte, compared with 8 and 12 cents per megabyte for Hopkinton, Mass.-based EMC's high-end Symmetrix arrays.

Tape storage typically costs less than a penny per megabyte. But some users who are eyeing Centera said they're hopeful that it will give them faster and more efficient access to data than tape does.

Michael Streb, director of technology architecture at New York-based Warner/Elektra/Atlantic Corp., said he's considering using Centera or other so-called nearline disk devices to store copies of CDs and videos.

Warner/Elektra/Atlantic now uses tape libraries made by Louisville, Colo.-based Storage Technology Corp. But, Streb said, "it's tough for us to restore large volumes of digital assets in a reasonable time frame for our business users."

Others in Market

EMC isn't alone in targeting fixed data storage. Sunnyvale, Calif.-based Network Appliance Inc. recently released a file server that was designed primarily for data backups but can also be used to archive data such as financial records.

But EMC's storage management software gives it a jump on rival vendors, said Steve Duplessie, an analyst at The Enterprise Storage Group Inc. in Milford, Mass.

EMC called Centera a "content-addressed storage" device because its software creates a unique 27-character identifier for each document or image stored in the system. A new file with a new identifier is created each time the data is changed, so the data can't be overwritten. In addition, EMC said, the content-based fingerprint lets applications retrieve data without having to know the physical location of the information.

Ellen Moloney, vice president of outpatient services at Newton-Wellesley Hospital in Newton, Mass., said she plans to test a Centera system in the hope that it will let radiologists and doctors instantly share images. That process is currently handled by "a film library staff dealing with manual films," Moloney said.

BRIEFS

Cisco Signs Deals for Two Acquisitions

Cisco Systems Inc. agreed to buy two small networking vendors, Billerica, Mass.-based Hammerhead Networks Inc. and Plano, Texas-based Navarro Networks Inc., in stock-swap deals. Hammerhead makes software to speed the delivery of billing and other services on IP networks; Navarro develops Ethernet-related components.

Microsoft Mum on Rumored Navision Buy

Microsoft Corp. declined to comment on reports that it's in negotiations to acquire Navision A/S, a Denmark-based company that develops business applications for small and midsize users. Navision also wouldn't comment specifically but said it "can confirm that it is considering a possible strategic transaction." A year ago, Microsoft bought Great Plains Software Inc., an application vendor in Fargo, N.D.

Ebbers Quits CEO Post at WorldCom

Bernard Ebbers resigned as president and CEO of WorldCom Inc. and also gave up his seat on the board of the struggling company. WorldCom, which last month lowered sales forecasts for its corporate network services unit, named Vice Chairman John Sidgmore to replace Ebbers. Sidgmore said he will consider various financial options, including the possible sale of some network assets.

Short Takes

Murray Hill, N.J.-based LUCENT TECHNOLOGIES INC. said it sold its distributed network control platform business unit to PLATINUM EQUITY LLC, a Los Angeles-based buyout firm. . . . San Jose-based AGILE SOFTWARE CORP. said it plans to cut its workforce by 15% due to continued losses and weak sales.

Sun Management Changes Continue; Zander to Leave

McNealy set to take back president's job as four execs depart

BY JAIKUMAR VIJAYAN

FOLLOWING disclosures by Sun Microsystems Inc. that four top executives plan to give up their jobs, including President and Chief Operating Officer Ed Zander, users and analysts are looking for explanations that go beyond the company's initial statements.

Sun said Zander will retire from full-time duties on July 1 after having worked at the computer and software vendor for 15 years, the last four as its president. Joining him in leaving their jobs on that date — the start of Sun's next fiscal year — will be the company's chief financial officer and the vice presidents who head its systems and services units (see chart).

Sun CEO Scott McNealy will assume Zander's responsibilities. But during a teleconference, McNealy described the management overhaul more as a routine changing of the guard than as a wholesale housecleaning.

"This is all part of a planned succession strategy that Ed and I and everyone in the management team have worked on for a year now," McNealy said. "I know it looks like a flurry here, but we are on goal and on plan in executing just about everything we wanted to do."

Not everyone was ready yet to accept that as the final word on the upcoming changes, however.

'Do They Know Something?'

"My question is, Why are all these senior people leaving now?" said Pete Lillo, manager of data center operations at NCCI Holdings Inc. in Boca Raton, Fla. "Do they know something we don't?"

NCCI, which collects and processes data for insurers and other firms in the workers' compensation industry, uses Sun's E10000 Unix servers to run several large applications.

"The fact is that a lot of people are leaving at the top levels of the company," said Jean Bozman, an analyst at Framingham, Mass.-based IDC. "It's incumbent upon Sun to explain to customers what this is about and make sure they understand what is going on."

The planned departures of the finance, systems and services chiefs were announced in serial fashion starting in mid-April. Like Zander, they will take on mentoring roles at Sun.

Sun last week confirmed that a fifth executive already left late last month: Stephen DeWitt, who was vice president of the company's content delivery operations. In addition, Sun said it's combining its software operations into a single group and setting up a new marketing unit — two moves that also will take effect July 1.

Critical Juncture

The changes come at a critical juncture for Sun. The company has lost money in three straight quarters, and IDC said Sun's market-leading share of worldwide Unix server revenue dropped from 39% in 2000 to 33% last year. Sun also faces increasing threats from Windows and Linux servers.

While Sun is unifying its software operations, responsibility for its high-end servers, midrange and desktop systems, and microprocessors will be split among three executives who will all report directly to McNealy after July 1.

Brad Day, an analyst at Cambridge, Mass.-based Giga Information Group Inc., said the new structure should give the hardware units more freedom to pursue strategies that make sense for their own parts of the market. That's especially important in the midrange and low-end sectors where Sun needs to compete against Windows and Linux, Day said.

But much of the new strategy that will result from all the upcoming changes remains to be seen.

"I think we're in the middle of some sea change at Sun in terms of where they want to go and where they are today," said Joyce Becknell, an analyst at The Sageza Group Inc. in Mountain View, Calif.

Changes at the Top

WHO'S OUT

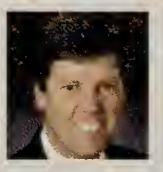
Ed Zander, 55, Sun's president and chief operating officer since January 1998

Larry Hambly, 55, executive vice president of enterprise services

Michael Lehman, 51, chief financial officer and executive vice president of corporate resources

John Shoemaker, 59, executive vice president of computer systems

WHO'S IN



CEO Scott McNealy, 47, will reassume the title of president

Hambly will be replaced by **Patricia Sueltz**, 49, now executive vice president of Sun's software systems group

Lehman's job will be taken over by **Steve McGowan**, 53, now vice president of finance for global sales

Shoemaker's duties will be split among **three executives who will report to McNealy**

Decisions, Decisions

Anil Gadre, vice president of Sun's Solaris software unit, spoke with *Computerworld* about some of the strategic issues the company faces in the operating system business.

What's the status of your deliberations on whether to reverse your January decision to kill Solaris 9 on Intel? We've had a substantial amount of input and interaction with various members of the [user] community. What we're trying to do right now is figure out an answer that works. . . . We have a lot of different things on our plate which we also have customer requests for, and it comes down to which direction to go.

Will Sun deliver its own distribution of Linux? We're not trying to compete with the Linux distribution companies out there. We're creating a distribution that goes on the [low-end] system platform that we will market. So you're not going to get the CD separately as a Linux distribution from Sun; you're going to get it on the machine.

– *Don Tennant*

UNCERTAINTY FOR SUN

Sun's Challenges: The company's server, software and services units all face competitive question marks.

QuickLink: 29460

More From Gadre: Read the complete Q&A with Anil Gadre on our Web site.

QuickLink: 29341
www.computerworld.com

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MARYFRAN JOHNSON

Real-Time Reality

THE RHETORIC around the "real-time enterprise" continues to rise, but perhaps for a very good reason. It's a golden opportunity for IT to once again show its true power.

Is there a company anywhere that doesn't want an *instant* 360-degree view of its customers? Is there a business left standing that isn't leveraging IT *right now* to enhance the bottom line and whomp competitors?

MARYFRAN JOHNSON is editor in chief of *Computerworld*. You can contact her at **maryfran_johnson@computerworld.com**

Well, OK then.

So where's that powerful IT opportunity? It's in making the real-time enterprise work, despite all the legacy code and human obstacles in the way. It's a given that the always-on infrastructure requires always-on business processes. But making that happen is very hard stuff that only IT can accomplish. It's a real-time tangle of integration issues, infrastructure upgrade challenges and contentious internal politics.

What's surprising — and inspiring — is that the real-time enterprise happens at all. But it does, in many remarkable ways.

I saw it myself, just last week, at a CIO summit sponsored by PeopleSoft. An impressive lineup of corporate users took to the conference stage to talk about their progress — and ongoing struggles — in becoming real-time enterprises. These CIOs, from companies such as Corning, Verizon Wireless, Thomson Financial, Bausch & Lomb, Credit Suisse and Duke Energy, talked about real time not in technical or computational terms, but in stark business language.

To Duke Energy, a $59 billion utility company, real time is about integrating the company's massive application infrastructure to support business processes that speed delivery of information to executives. "Real time is a mind-set that requires a cultural change," said CIO Stan Land.

To global optical supplier Bausch & Lomb, real time is about delivering "actionable information" to customers as diverse as Wal-Mart and a private practice of ophthalmologists. "When our new CEO came in, he said we had to lower administrative costs, be more competitive and use IT to do it," explained CIO Marie Smith. That meant developing supply chain and CRM expertise over multiple customer channels and geographies.

To Corning, real time is about moving from a transaction-driven organization to an "information-driven enterprise," said CIO Rick Beers. "People making decisions — that's where the transformation occurs." The few IT projects getting funded at Corning these days are all related to enterprise systems and supply chain, he added.

In our Business section last week, marketing guru Regis McKenna [QuickLink: 29156] wrote that IT is "evolving as the nerve center of customer information and satisfaction." A company's ability to keep the customer "dialogue" ongoing and engaging, he suggests, has largely become the responsibility of IT.

We also wrote last week about the real-time drivers behind Huntington Bancshares' upcoming redesigned Web site [QuickLink: 29233]. The bank holding company is wrapping up a complex yearlong project to give online customers access to a host of real-time services that CIO Joe Gottron thinks will double the percentage of online customers.

Today, real time promises exceptional returns for forward-thinking companies that forge a bond between IT and business growth. But inevitably, real time will simply be the way everyone does business. ◗

DAVID FOOTE

How to Be One Of 'The Best'

I'M INTRIGUED by lists that rank and compare — such as "Top 10s" and "Best ofs." American culture is steeped in competition and envy of those at the top. *Computerworld*'s annual 100 Best Places to Work in IT list is no exception.

But do you ever wonder how these annual lists compare to those from prior years? I do, especially when it comes to evaluating IT departments. So, I tracked down the 2000 and 2001 lists of the 100 Best Places and compared them to this year's rankings. Here are two findings:

DAVID FOOTE is president and chief research officer at Foote Partners LLC, a management consultancy and IT workforce research firm in New Canaan, Conn. Contact him at **dfoote@footepartners.com.**

Industry and economic conditions aren't big factors. You might expect that companies in industries that suffered more serious recent economic impacts would disappear from the list. Not true in financial services, which gained about as many companies on the 2002 list as it lost, and even added a few to the prestigious top 50. All technology industry companies (predictably) vacated their positions this year, but utility and health care companies improved their showings substantially. And while 10 professional services/consulting firms failed to requalify this year, five new firms joined the list, and even better, nearly two-thirds of the entire segment made the top 50 in a very bad year for their industry.

As promotions and training investments go, so goes your popularity. For years, IT workers have been telling me that they're happiest when learning new things and growing in their jobs, which may or may not include frequent promotions, depending on the individual. A close look at the top 30 companies on each annual list shows that nearly every company that moved lower or completely off the rankings decreased training expenditures — some by as much as 40% to 80% in a single year. Some companies that fell in the rankings promoted 10% to 20% fewer staffers. Some both cut training and promoted less. Conversely, companies often improved their positions when they spent more on training or promoted more staffers. There are other variables at work in *Computerworld*'s rankings, but these last two seem to be the most consistent influencers.

So, to be the best, invest — in peoples' careers, not just in getting the work done. ◗

For more *Computerworld* columnists and links to archives of previous columns go to: **computerworld.com/columnists**

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Reports from the road: Textron.

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And the impetus behind the interactive multimedia movement.

They're everywhere. Clicking PDAs to access vital information. Dialing cell phones to download e-mail. Logging on to laptops to communicate anywhere on the planet. It's the Chens of the world who are turning business on the move into business as usual. And it's Nortel Networks™ that develops the technology to meet the challenges of mobility and helps businesses generate revenue. For instance, integrated multimedia technology from Nortel Networks enables companies such as Chen's to communicate via video calls, voice mail, e-mail, and faxes over any device and any network. Whether Chen is in the office or on the road, he's always in touch. So, he doesn't have to find information to stay productive and competitive – it finds him.

Gartner names Nortel Networks Leader in Converged Voice/Data*

And with Nortel Networks Optical Ethernet-based network hosting solutions, service providers can manage the delivery of these services so Chen can focus on his core business. Just one more way Nortel Networks is making the Internet what you need it to be.

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World-Class IT Employers

SPECIAL REPORT

Keeping prized IT workers satisfied is still a top priority in the U.S. and around the world.

EDITORS' NOTE

AT A TIME still largely defined by corporate losses and wide-scale layoffs, it would be tempting to think that IT workers can be had — or kept — for less than in past years.

While there may be cutbacks in fringe benefits and just-because bonuses, the best IT employers in the U.S. and abroad haven't reduced their commitments to salaries, training and career investments for their IT staffs.

The reasons are simple: Skilled IT workers are still highly valued and desperately needed. The cost to hire and train a new IT worker still far outweighs the cost to invest in one already on staff. And industry experience and company knowledge are still the greatest factors contributing to bottom-line success.

COMPUTERWORLD The Best Places to Work in IT

That last item is especially important in an economy where IT budgets are being reduced regularly and IT staffs are expected to do more with less. This year's U.S. Best Places to Work in IT special report reveals how the top employers manage to do exactly that, with tips on how they recruit and retain their IT workers.

Also in this issue, *Computerworld* unveils its first Best Places to Work in IT Worldwide list. To illustrate the global IT workplace, we harnessed the collective resources of 21 *Computerworld* editions worldwide to compile a listing and profiles of the best employers globally for recruiting and retaining IT workers.

What we found most striking was that, differences of geography aside, IT workers the world over have much in common. As in the U.S., salary and benefits certainly top their list of priorities. But in addition to monetary compensation, IT workers worldwide want to know that their contributions give value to their companies; they want their talents to be allowed room to grow; and they want their work to form a meaningful part of their lives.

And IT workers from Bulgaria to Boston crave job stability and security in this uncertain global economy. They want to keep their job skills polished, while getting their hands dirty on cutting-edge technology.

Here we present the very best employers that are giving their IT workers the opportunity to earn a living, while achieving their goals. ◗

David Weldon is project editor, U.S. and Worldwide Best Places. Ellen Fanning is project editor, Worldwide Best Places.

ONLINE

In addition to this special report in print, there are many more features, charts and profiles online.

- **U.S Best:** An interactive chart of the top 100 U.S. IT employers, sortable by company, industry and benefits offered, plus features found only online. **QuickLink: a1980**
- **Historical Best:** The full list of the top 100 historical U.S. Best Places to Work in IT, sortable by company name, industry or ranking each year. **QuickLink: a1990**
- **Worldwide Best:** Profiles on each of the top 100 Worldwide Best Places, an interactive chart sortable by company, region and benefits offered, and regional trend stories. **QuickLink: a1960**

LUBA LUKOVA ILLUSTRATION

PAUL COSTELLO earned an executive MBA while working as a programmer at the University of Miami in Coral Gables, Fla. If you think a newly minted MBA is the last person you'd find in an IT shop, think again.

Costello is now executive director of administration and budget control for IT at the university, where his finance and management skills are put to use daily.

Conventional wisdom says highly trained staffers simply boost their marketable skills and look for higher-paying jobs elsewhere. But as the companies named *Computerworld*'s U.S. Best Places to Work in IT demonstrate, just the opposite is true.

U.S. OVERVIEW

Take Costello, for example. He earned that MBA 17 years ago.

"We want everybody to grow, whether they're training in management or in IT or getting a certification in a new technology," says Lewis Temares, vice president of IT at the University of Miami and the boss who recommended Costello for the training program. Because it's an educational institution, the university allows its IT workers to take up to two classes during the workday. Those who elect to take two classes need to make up only one of those hours during the day, because the first hour is written off as lunch time. And if those courses are directly related to work or part of undergraduate coursework, they're free.

"People don't make the complete job decision on pay alone," says Temares. "Money is not a primary motivator; it's only a temporary motivator. People don't want to not make money, but they do want to come into a place where they want to work."

As an institution of higher learning, the University of Miami may offer some educational perks that few corporations can, but that doesn't mean that professional and management training aren't highly regarded facets of corporate life.

Companies that are successful in IT stay that way by grooming their employees through mentoring and formal training that are part of an overall career development plan. In addition, they view their workers as people who need flexibility in striking a balance between work and home as well as between handling routine duties and pur-

Flavors of Flexibility

IT workers crave flexibility and variety in their work lives. Thanks to some creative thinking, employers are giving them what they want:

Flexibility in schedules: Some employees like to start their workday at the crack of dawn. For others, it's important to start later in order to drop off a child at school or avoid rush-hour traffic. While the core set of employees works the typical 9-to-5 day, top IT departments recognize the importance of striking a good balance between work and home.

"You want to make sure that employees' needs are met and to make sure the job gets done," says Paul Costello, executive director of administration and budget control for IT at the University of Miami.

"By being flexible, you and the job become important to the individual," says Costello. "Flexible job hours or time arrangements are not always easy to achieve. But if you make the job fit the employee, that employee will want to keep the job and to do it well."

At Cabot Corp., a Boston-based specialty chemicals company, critical projects often require long hours, but the extra time doesn't go unnoticed.

"We have a fairly young staff, so the ability to balance family and work is very important," says Marian Cole, director of IT infrastructure at Cabot. "If you work a lot of overtime, you get time off. [Compensated] days are very much a part of our culture."

Variety in assignments: The ability to select some assignments and vary long-term work tasks scores big points with IT workers, who relish the challenge of new technologies and the opportunity to flex their intellectual muscles in new assignments.

At Home Depot, new jobs get posted on the company's intranet, and staffers get to select which assignments they'll take on next, which may include setting up training courses to obtain required skills.

At Avon Products, CIO Harriet Edelman recognizes that IT work is a form of creativity for many technologists.

"If you're in a reactive role with no creativity, then you're more vulnerable to turnover, because your employees will go somewhere else where they can use and develop their talent," she says.

– Lee Copeland

What Makes IT Workers Tick

The top U.S. companies have ways to get to know their workers as individuals, from mentoring programs to one-on-one skills assessments. By Lee Copeland

suing pet projects at work.

The Home Depot Inc. is one such company. The Atlanta-based home-improvement chain selected Java as a core technology several years ago and employs more than 450 workers with Java development skills — most of whom were trained in-house, says Mike Anderson, vice president of information services.

"We didn't hire all those people into the company," he says. "We actually cross-trained most of those developers, from things like Cobol and Informix, to learn that trade, and we took some Java developers and trained them to work on the mainframe."

Hiring new staffers may have jump-started a few Java projects, but Anderson says that by cross-training its existing developers, the company gained a long-term advantage that's key to keeping its operational costs down.

Keeping skill sets current and being exposed to new areas of the business that are affected by IT systems and applications rank highly with technology workers. The best employers know that the more closely projects are aligned to core business needs, the more IT and workers become assets.

Help Steer Careers

Like Home Depot, Comerica Inc. and State Farm Insurance Cos. focus on employee development programs, stressing both formal and informal mentoring relationships to help steer the career paths of their IT staffers.

Francisco De Armas, director of emerging technology services at Comerica, a Detroit-based bank with 350 branches throughout the U.S., started as a programmer/analyst in 1994.

A year later, De Armas struck up a mentoring relationship with John Baran, CIO at Comerica. During the course of that ongoing relationship, De Armas and Baran met regularly to discuss Internet technologies and business strategy. De Armas says the relationship helped groom him for his current management post.

"I was extremely impressed and flabbergasted that the CIO of a major corporation was taking the time to mentor a low-level technology guy," De Armas says.

Later on, De Armas' manager nominated him for Comerica's Leadership College, which offers management courses in subjects such as conflict resolution, coaching and mentoring to its high-potential IT workers.

"It was a hard step to move from technology to the management ranks,"

MICHELLE ANOONIAN

FRANCISCO DE ARMAS started as a programmer/analyst at Comerica but rose to the position of director of emerging technology services under the mentorship of the bank's CIO.

De Armas says. "I was this rough-around-the-edges technology geek, but they care about people."

Barb Wanthal, an assistant vice president of systems at State Farm, also credits mentoring as a key tool that helped further her 18-year career at the $48 billion Bloomington, Ill.-based insurance giant.

Wanthal also started as a mainframe programmer. But she has received a slew of formal courses and on-the-job training that has helped her develop her technical, business and management skills. Wanthal is currently involved in a formal mentoring relationship with an assistant vice president of public affairs that she says keeps her connected with current business issues. She's also a mentor to two lower-level IT staffers.

Home Depot's Anderson says exposing IT staffers to other aspects of business and technology keeps them informed and nimble.

"Our developers are really business integrators," Anderson says. "I don't have to carry the overhead of developers that are trained in just one language or platform. Business used to be about stovepipe applications, but to succeed at an integrated environment, you need flexibility."

Keep Lines of Communication Open

But in the end, without an open relationship between staff and management, not much would get discussed about training needs, flexible hours or selecting a suitable assignment.

De Armas once managed a developer who produced less-than-stellar results on programming tasks but who volunteered for the hardware systems aspects of application development. Instead of giving him the boot, De Armas lobbied for an opening in systems administration and saw to it that formal training followed.

"We pay attention to people and try to stay attuned to what makes them tick," De Armas says. "He's a great systems analyst. It wasn't that he was a bad developer, but I don't think he enjoyed it, and it showed."

Along those lines, companies that sport nonhierarchical management philosophies — where workers from all levels of an organization feel that they can and do make significant contributions to the business — also receive strong job satisfaction reviews from IT staffers.

"We have a strongly nonhierarchical working environment, where everyone understands where they can have an impact," says Jeffrey Spar, CIO at The Reader's Digest Association Inc. in Pleasantville, N.Y. "The whole group interacts with each other quite a bit. There's no real feeling of having a problem that you can't tell a manager about, and that doesn't mean an analyst couldn't solve a problem that a director would."

Harriet Edelman, CIO and senior vice president at New York-based Avon Products Inc., says her company's environment is open. "People feel like they have an impact and a say. What our business needs are solutions that work. And that's the most reward that you can give, because people get a psychic reward of working with the business."

Spar and Edelman both define nonhierarchical work environments as places where everyone — from vice presidents to systems analysts — is encouraged to get engaged in improving the way IT serves the business. They say that by removing gaps between workers and decision-makers, they're also infusing their staffs with a sense of ownership about the business.

"It means that people don't have to work things up and down the system to get approval, so people feel empowered to solve things and make suggestions," Spar says.

That's not to say that regular components of job satisfaction aren't important, such as a competitive salary and first-class benefits. But at top companies, those criteria are already in place. ▸

Copeland is a freelance writer in Chicago.

Why They're Tops

The 100 U.S. Best Places to Work in IT score high in retaining and promoting IT workers:

Percentage of IT staff promoted last year

16%

Turnover rate of IT staff in 2001

9%

Average number of years IT staffers have been with their companies

8

INTERACTIVE LIST OF U.S. TOP 100

The full list of top U.S. Best Places to Work in IT, sortable by company name, industry or benefits offered:

QuickLink: a1980
www.computerworld.com

How to Motivate With Hot Projects

1. Make sure IT team members understand the business value of the technology they're implementing.
2. Use the customer's need to motivate IT and tie business results to what is accomplished.
3. Choose workers who show initiative, keep up with technology and have strong communications skills.
4. Rotate workers among hot projects to give them variety.

Even more than training and benefits, IT professionals want hot projects that will keep them challenged and motivated. By Matt Hamblen

ASK EXPERIENCED IT WORKERS what motivates them in their jobs, and you'll hear more than just talk about big salaries, bonuses and benefits packages. Remuneration is important to them, but these workers have an inner drive to snag hands-on assignments that include hot new technology.

"I am motivated by opportunities that provide interesting, meaningful work," says Laura Radcliffe, a 20-year IT veteran at Electronic Data Systems Corp. in Plano, Texas, one of *Computerworld*'s top 10 best employers for hot projects (see page 58).

HOT PROJECTS

Radcliffe defines a hot project as "one that provides learning opportunities and challenges, typically centered on new technologies or large enterprise systems." Several CIOs add that a hot project must have a tangible importance to the customer and the bottom line.

But how do IT managers use hot projects to keep employees motivated and loyal, and how can IT workers get these choice assignments?

"Good leaders seek challenging opportunities for their strong performers and will go out of their way to ensure that the individual is challenged and receives assignments that provide 'stretch,' " says Radcliffe, a systems portfolio manager charged with overseeing IT teams assigned to EDS's clients.

Indeed, EDS and other leading IT employers work with an abundance of cutting-edge technologies. But managers at these companies say they also constantly face questions about whether a hot technology has staying power or will prove to be an expensive fad. Working on the cutting edge also means they must worry about the complexity of integrating unknown technology within established legacy systems.

These leading workplaces are riding the wave of new technologies that could vanish at a moment's notice and, if managers and IT workers aren't careful, sap valuable resources.

"A lot of CIOs within our client base might be reading about some vendor's promising new technology and find it hot, without understanding the purpose," Radcliffe says. "Hopefully, EDS does try to understand the process, rather than implement new technology for technology's sake."

Radcliffe is in charge of teams of IT workers assigned to client sites where a technology integration project could make or break the customer. As such, many projects involve setting up integration backbones or architecture standards for business-to-business or application-to-application projects. Some involve creating complex Web portals or models for knowledge system architectures.

Offer Access to Hot Technology

"Tying business results to what IT people do . . . encourages action and urgency in meeting project goals," says Terry Milholland, CIO and chief technology officer at EDS. He advises managers to use the customer's need for a project as a motivator for IT workers.

Build Business Value

Another company with hot projects, Harley-Davidson Inc. in Milwaukee, builds hot motorcycles. But its IT staff still must tend to legacy systems and remember the business value of its newest technology.

"It hasn't been to my satisfaction yet, but we are really trying to drive business value" in projects instead of promoting technology for technology's sake, says Reid Engstrom, director of information systems at Harley-Davidson. "Understanding the business value really makes a project more exciting and gives people a reason to come to work."

Effective managers need to explain the business objectives of a project, Engstrom says. At Harley-Davidson, a collaborative inventory management project drives revenue by putting the best-selling motorcycles and accessories on dealer floors as quickly as possible.

Managers also need to remember that lower-level employees, not the leaders, often have the greatest technology savvy, Engstrom says. "Sometimes people assume the leaders know it all, so it becomes a question of how to empower those lower down," he says.

Engstrom urges midlevel managers and inexperienced IT workers to get assigned to the hottest projects by showing initiative, keeping up with current technologies and learning soft skills such as how to work effectively on a team and how to talk with business customers.

Keep Worker Skills Current

Jeff Scheele, senior systems manager for applications at Harley-Davidson, says the company's motorcycle mystique helps when he recruits personnel, in addition to the lure of exciting IT projects. When Scheele arrived five years ago, he was attracted to a company that was AS/400-centered and was set to build new Web-based technologies and skills, having moved off a mainframe in the early '90s.

Harley-Davidson must still administer the legacy AS/400s as it tries to use new technologies to help expand manufacturing capacity with new plants and boost business-to-business integration with suppliers, Scheele says. These technologies include Microsoft Corp.'s SQL server and XML messaging.

"Still, we need some applications to stay on the legacy platform," which has required some IT workers to focus their energies there, Scheele says.

That reality has made Scheele philosophical about what really is a hot technology amid constant change. "Over time, your cutting-edge platform will become your new legacy platform," which puts pressure on managers to keep their IT workers current, he explains.

Harley-Davidson managers have fostered hot projects by offering the promise of challenging work as early as the employee recruiting phase. There's also a collaborative environment that helps to increase productivity on those projects, "where people feel empowered, where managers don't stand over you, where they rely on your opinion and where there's a lot of support," Scheele says.

He urges managers to stay in tune with the interests of their workers through quarterly review meetings, where a manager and an employee can compare what projects are coming up and what the employee wants to work on.

"We've offered real challenges in the opportunity to work on new technologies and high-visibility projects while not relying on bonuses," Scheele says.

IT workers at the company must stay in touch with the needs of real end-user customers — those who ride motorcycles — if only to know how business and IT can serve them better on the consumer Web site. To do so, Harley-Davidson sends IT staff about once a year to customer motorcycle rallies to help with demonstrations, Scheele says. A generous commitment to training, along with travel opportunities, adds to the company's ability to keep its staff ready to work on hot projects.

Offer Freedom and Variety

Training on hot technologies is key to keeping staff motivated at Kanbay Inc. in Rosemont, Ill., says Bala Kalyanansundaram, a practice leader at the IT consulting company. Kanbay relies on training and certifications from IBM and Microsoft, which Kalyanansundaram says "generates interest and enthusiasm." Kanbay also grooms workers on internal technology rollouts before they work on outside client projects.

Some companies are inherently technology-driven and are therefore devoted to hot projects.

At FedEx Services, an operating company within FedEx Corp. in Memphis, IT manager Chris Ferguson is working with a new Web-based application called InSight. The application proactively provides package shipping status to a customer based on an account number, making a tracking number unnecessary.

The project fills a customer need and promises to provide a competitive advantage, which has been a "huge motivator" for workers, Ferguson says. IT employees at FedEx have the freedom to move to their areas of interest — something that's made easier because FedEx uses a wide variety of technologies.

Matt Frantzen, assistant director of IT architecture at The Principal Financial Group, says he helps motivate workers by rotating them on hot projects for variety. A huge initiative that was launched in 1999 at the Des Moines, Iowa-based financial services firm to provide a centralized customer database has led to many new technologies, which are selected based on best of breed, he says. "Principal is a true [return on investment] kind of place, but we buy products and push their functionality, which is what makes them hot," Frantzen says.

One bit of advice that Frantzen has regarding new technologies is to research them carefully to prevent IT snafus during implementation. "Yes, we do get those airline magazine articles handed to us on something like customer relationship management, and that's when we do our research and decide what to do next," he says.

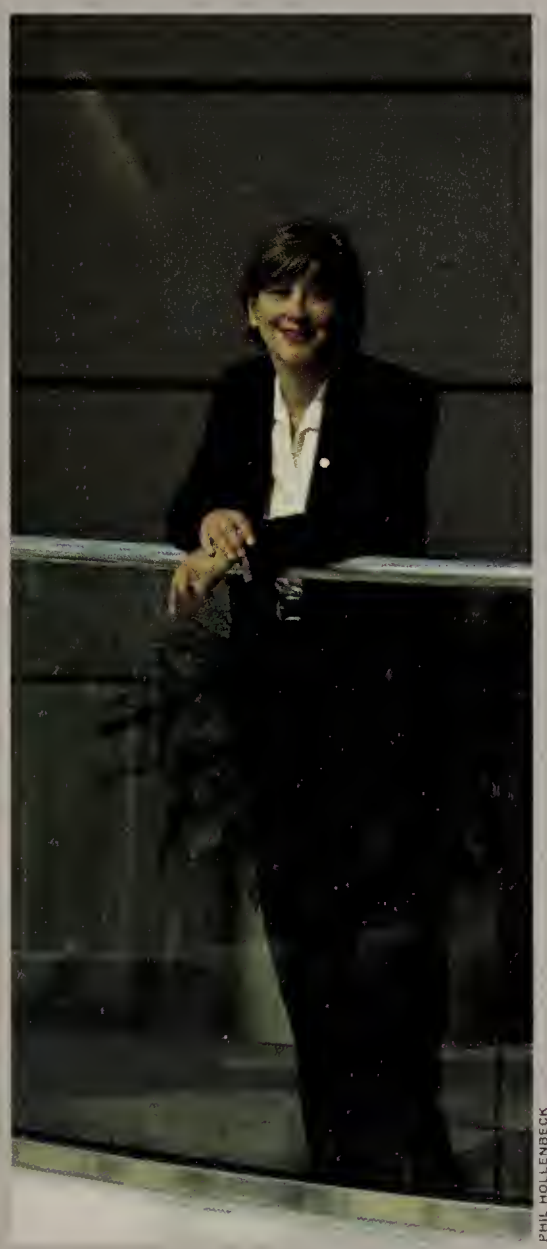
Building a Better Team

The trick to building a strong technology team is finding the right mix of people, says **Laura Radcliffe**, a systems portfolio manager at EDS. She says she has learned to seed new teams with a few people experienced with the particular technology being implemented or one that's similar. Radcliffe then adds newer IT workers to the group "who learn by being around imaginative people," she says.

Rank-and-file IT workers at EDS can get assigned to hot technology project teams by building a history of meeting commitments and "creating an environment of trust, where you can be counted on as a collaborative member of the team who produces quality work," adds Terry Milholland, CIO and chief technology officer at the company.

With less-experienced workers, Radcliffe says, she looks for self-motivated people who learn about a technology by doing research on the Web or in textbooks instead of settling for what's preached in a classroom.

– Matt Hamblen



PHIL HOLLENBECK

EDS'S LAURA RADCLIFFE says she adds newer IT workers to an experienced group who then "learn by being around imaginative people."

GET THE WORD OUT

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LUBA LUKOVA

Deliver Top-Drawer Training

Leading companies quench IT workers' thirst for new skills with training tied to the business, technology and individual growth. By Michelle Bates Deakin

TWO YEARS AGO, Mark E. Yellen was in a huge bind. IT staffers were leaving his Buffalo, N.Y.-based company, Appraisal.com, in droves, complaining that they weren't being offered enough opportunities for professional growth. At the same time, managers were regularly firing other employees because they didn't have any business knowledge to go along with their technical skills.

To stem the exodus, Yellen created Appraisal.com University, an in-house training arm that offers at least one course each week, including, among other things, XML training for marketers and leadership courses for programmers. The university's courses are designed to give staffers industry- and company-specific knowledge that can increase job satisfaction and drive revenue.

TRAINING

A year and a half after the training program started, it's not unusual to find half the software company's 70 employees in a seminar on any given day. And turnover has plummeted by 300%.

"There are two sets of goals that every staff member has to have: They have to fill the company's goals and their own," says Yellen, who calls himself Appraisal.com's "chief evangelist" as well as its president. "If they fulfill their own goals and not the company's, we'll fire them. If they fulfill the company's but not their own, they'll quit." The training program seeks to bring both sets of goals into alignment.

Companies that are much larger than Appraisal.com have learned a similar lesson about IT workers: If employees aren't learning, not only are they performing poorly, but they are also looking for other jobs.

"Good training satisfies the company's and the employee's objectives," says Peter Jessel, CIO and a managing director at New York-based management consulting firm Towers Perrin. "If people feel like they have competitive skills and could easily leave and find another job, they are less prone to do it."

The companies that rank as *Computerworld*'s best employers for training (see page 52) are indeed succeeding at meeting both their own and their employees' needs — giving the companies the best return on their training dollars and employees the most valued skills in the marketplace. At several companies, central to this goal are

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elaborate performance reviews that help employees set personal goals while advancing corporate priorities.

In addition, the best IT employers are putting greater emphasis on making sure that IT employees understand fundamental business principles — not just technology. And to ease travel burdens and reduce costs, many companies with top-flight training are emphasizing customized in-house programs.

Draft Career Plans

Managers at American Electric Power in Columbus, Ohio, are so focused on career development that it's been taken out of the hands of project managers. Instead, each IT development team at the 23,000-employee company has both a project manager and a career coach.

"Coaches are responsible for helping employees with their development and skills enhancement," says Velda E. Otey, director of IT career management for the utility's 911-member IT staff. While project managers stay focused on the nuts and bolts of a project, coaches help IT employees craft yearly development plans that address what skills they need to enhance their careers and those the company needs for upcoming projects.

On average, American Electric earmarks approximately $8,000 per IT employee annually for training. However, Otey says that number can go up or down for each employee. "We've stayed away from setting minimums and maximums, because it depends on the position you have and the project needs," she says.

At OCLC Online Computer Library Center Inc. in Dublin, Ohio, a library cooperative that, among other things, administers the Dewey Decimal System, employees and their managers also collaborate to create yearly professional development plans. Those plans dictate the training an employee will receive over the course of the year.

"[These plans] allow a dialogue between managers and employees," says Joseph Marth, manager of organization development and learning at OCLC, which has 1,100 employees and an IT staff of 360. OCLC's training focus is on identifying gaps in learning that hinder employees from completing a job. Then Marth, managers and a nine-member in-house training staff create a patchwork of formal and informal programs to fill in the gaps.

A majority of the staff already possess advanced degrees, so Marth knows that the training programs must combine depth, substance and opportunities for personal and career growth.

Typically, career development plans call for a combination of training methods, from computer-based programs to in-house classes that are offered almost daily. During one recent week, for example, OCLC offered seven classes that any employee could attend, including Understanding the Library's Future, Group Facilitation, Effective Training Skills, Financials for Non-Financial Managers, and Oracle and Java development workshops. OCLC even offered classes on how to speak Dutch after it acquired a company in the Netherlands.

"We're a very academically based company, and a huge portion of our population has advanced degrees," says Marth, who himself has a Ph.D. in education psychology. "Our managers have to tell employees when they're getting too much training. But that's a great problem to have."

OCLC earmarks 4.2% of the money it sets aside for salary and wages for training expenses. That translates to approximately $2.5 million per year.

Peppered throughout OCLC's in-house offerings are many business-oriented courses that IT staff are encouraged to take, covering topics such as team-building and leadership development. Likewise, many companies are encouraging their IT staffs to hone their nontechnical skills.

"The fatal flaw in most IT training programs is that they provide many opportunities for IT-specific training, but they leave out the business-level training that is so important to the success of any IT professional," says Appraisal.com's Yellen. He's the instructor of several Appraisal.com University classes, including Situational Ethics and Principles of Excellence in Productivity Management.

Teach the Business Side

At CenterBeam Inc., an IT services company in Santa Clara, Calif., all 170 employees — approximately half of whom are in IT — are encouraged to take an internal seminar on root-cause analysis.

"An understanding of root-cause analysis results in better service to our customers by helping people respond to underlying issues," says CenterBeam's executive vice president and chief technology officer, Glenn Ricart. He stresses that the best training fosters three things: business skills, customer relations expertise and technical ability. Ricart says this type of training helps workers think better — an asset they can take with them anywhere.

CenterBeam sets aside $5,000 to $10,000 per employee for training annually, with an eye toward each IT staff member receiving two weeks of training per year. The company puts particular emphasis on advanced industry certifications.

"Certifications help people look across the industry and see that they are knowledgeable compared to their peers," says Ricart.

The certifications not only give CenterBeam a well-schooled workforce, but they also arm employees with solid credentials that can succinctly convey their expertise to new employers. With a stimulating environment and supportive management, however, Ricart says he isn't worried about attrition.

"Our goal is to build and innovate the best IT organization in the world, and training is a part of that," Ricart says. "We hire people who fit our corporate values: integrity, passion, teamwork, ownership and fun. And we add training on top of that."

American Electric also puts an emphasis on developing both business skills and technical skills, especially communication and project management expertise.

"How you get the project done is as important as if you get it done. It's no good if you get the project done and there are dead bodies all around," says Otey. "We want to know: Did you work together in teams? Did you share the knowledge? Did you leave the team with more knowledge and experience so they will be better on future teams?"

To Otey, these intangible business skills help build a worker's career as much as technical prowess. ◗

Deakin is a freelance writer in Arlington, Mass.

How to Provide Better Training

1. **Offer classes that develop business skills, especially communication and project management expertise.**
2. **Consider your audience. Classes should challenge workers and offer personal and career growth.**
3. **Ease travel burdens on employees and reduce costs with in-house, customized training.**
4. **Have employees and managers collaborate on career development plans and outline training options.**

Staying in or Going Out?

Many companies with a sharp focus on training have found ways to bring learning in-house. This serves both the company's and employees' needs by reducing the cost, burden and disruption of business travel. But getting out of the office has its advantages too.

■ **Bring It In** Joseph Marth, manager of organization development and learning at OCLC, says he likes to find outside instructors who can provide tailored training programs with the company's specific needs and culture in mind. "It increases the likelihood that the training will actually transfer to the job," he says.

■ **Send Them Out** Peter Jessel, CIO and a managing director at Towers Perrin, says he likes to provide in-house education because the curriculum can be more company-specific. But he acknowledges that workers can benefit even more from mingling with employees from other organizations.

"If you're trying to teach them general management, listening to people at other companies might be helpful," says Jessel. "Otherwise, it's like sitting around a cocktail party with all your oldest friends. At least half the conversation you've already heard before."

– *Michelle Bates Deakin*

FIND TRAINING CLASSES ONLINE

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Regional Floral Network, January 14

Regional Floral Network, February 14

MARY JO CASEY WAS AN IT program director at National City Corp., a financial services firm in Cleveland, when she asked CIO Jim Hughes about a recently posted job opening. What he told her turned out to be the best career advice of her life: She wasn't ready.

"Jim said I often appeared to be tired, stressed-out and overwhelmed in my current position," Casey recalls. "How could he move me up?"

But Hughes also gave her advice on how to get better control of her job and enrolled her in courses in communications and in setting and achieving goals. The combination of candid feedback and targeted training was just what Casey needed.

CAREER DEVELOPMENT

"It made such a difference in my life," she says. "It opened up a lot of opportunities."

Career development is a complex stew of individual potential, peer and supervisor feedback, training, challenges, mentoring, visibility and coaching, as well as talent and skills. But it takes a leader to stir the pot. *Computerworld*'s Best Places to Work in IT for career development (see page 50) have developed various recipes, but all have executives who keep the mix bubbling.

Continued on page 36

MARC BERLOW

"I WANTED TO LEARN and kept asking for additional stuff to do," says NMDP's Tim Longsdorf (left), pictured with CIO Paul Zyla.

Become Partners In Setting Goals

A nurturing manager, plus talent and timing, are vital ingredients to developing an IT worker's career. By Kathleen Melymuka

Online Gift Retailer, October 24

Online Gift Retailer, December 24

Continued from page 34

In Casey's case, she says she learned to delegate. She reorganized and restructured her team so it could function without her. Meanwhile, Hughes began to challenge her. He asked her to make executive presentations to increase her visibility among senior management at National City.

"Jim was very aware of how valuable that was to my career," Casey says. He helped her practice and showed her what the senior executives would be looking for. "I was two levels below him, but he mentored me," she says.

When a divisional support manager position opened up last year, Casey got the job, even though she lacked experience in that area. "Jim looks for talent vs. experience," she says. "If someone is good here, he gives them an opportunity there."

Find Creative Approaches

Smaller organizations and nonprofit companies may lack the resources to fund high-powered career-development efforts for their employees, but creativity can fill the gaps.

In 1992, Tim Longsdorf was recruited as a night-shift computer operator at the National Marrow Donor Program (NMDP) in Minneapolis. He began taking computer courses at a local technical college and was reimbursed by the NMDP.

"I wanted to learn and kept asking for additional stuff to do," Longsdorf says. The day staff initially left him small scripts to work on and later moved him up to C programming, which he was studying in school. Longsdorf would get as far as he could on the tasks at night and then wait for the morning programmers to coach him when they got to work.

When a programming job opened up in 1995, Longsdorf felt he was ready. But the job description said the position required a computer degree, and his degree was in biology. CIO Paul Zyla had been impressed with Longsdorf's determination and commitment to learning. Backed by other managers and programmers, Zyla worked with the human resources department to have the job description rewritten, and Longsdorf got the job.

"I did a lot of work to make it happen," Longsdorf says, "but there were an awful lot of people pushing for me, too." A year later, he was promoted to programmer/analyst, and he's now a senior programmer/analyst. "He's essential to maintaining and developing our main system," Zyla says.

The 61-member IT department at NMDP is only a decade old, and career development for the current staff has been ad hoc but successful. More than half the staff has been promoted over the past two years.

How to Grow Staff Careers

1. **Train managers in the fundamentals – from communications to budgeting to coaching and mentoring.**
2. **Create individual development programs to build skills and leverage strengths.**
3. **Tie managers' performance reviews to their staffs' promotion rates.**
4. **Team up with local colleges to help train staffers and recruit top graduates.**

Get Cozy With Local Colleges

Bending the rules of human resources is only one of several creative approaches Zyla has used to get more bang for his career development buck. When he discovered that local colleges didn't offer courses in C for Unix, a skill his staff needs, he became a board member at a nearby technical college, where he helped direct curriculum and later signed on to teach.

The college gets advice on real-world IT needs and a teacher who has hands-on skills. NMDP gets a pool of interns and graduates with the skills it needs, and Zyla gets to know them in class and recruit the most promising.

Zyla also uses the college as the next-best alternative to an extensive in-house training program. Rather than attend expensive seminars and conferences, his employees enroll in his school for training in skills such as Java, Web development and HTML and work toward degrees.

"If a person expresses a desire to get some training and if it's realistic, they get to do it," Zyla says.

Empower the Employee

Regardless of the program, career development depends on the talent, energy and ambition of the IT workers.

"Our philosophy is that, ultimately, employees are responsible for achieving their goals," says Tricia Myers, training manager at Household International Inc., a Prospect Heights, Ill.-based consumer finance company. "We provide tools and resources to help them get there."

Those tools worked for Mike Halstead. He started working at Household in 1994 as an entry-level mainframe programmer. But he was soon taking courses in technology at a community college and was able to land a job in the client/server area.

Halstead was interested in management, so he and his boss set up a career plan. In 1996, he began a master's degree program in information systems at DePaul University in Chicago, for which he was reimbursed. He also took internal development courses on topics such as project leadership and communications. Halstead began to get more responsibilities and visibility, as well as mentoring from senior executives at Household.

In the spring of 1999, Halstead moved laterally into an e-commerce job. He earned his master's degree later that year and in October was promoted to e-commerce manager. Last year, he became assistant vice president for e-commerce.

"I was never pigeonholed," Halstead says. "There are plenty of opportunities. It's just a matter of seeking them."

Al Crook, director of human resources at Household, uses a well-defined process to fuel the careers of the company's 1,650 IT workers. Employee handbooks identify success factors and competencies for various positions along different career paths. The handbooks also help employees and their managers develop career plans and determine what training they need to move up.

Executive-led career seminars called Household Express are designed to jump-start workers who have been on the job for 90 and 120 days. Other tools include required courses for managers in topics such as creating a positive environment, leadership and hiring.

Technologists can choose from more than 150 classroom and online technical training classes. There's also reimbursement for job-related college courses. A formal mentoring program is now pairing 26 high-potential IT employees with senior managers to accelerate their development while enhancing the diversity of Household's management team.

With more than 20% of IT employees promoted each year, the career development stew at Household is bubbling nicely. ◗

NO LADDER TO CLIMB

Six Conversations, Hewitt Associates' unconventional career development program, gives workers an opportunity to play to their passions.

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Investing in People Pays Off

Boot camp isn't just for soldiers. At National City, all new managers in the company's 1,250-person IT department go to a week-long, in-house training session where they learn management fundamentals – from communications to budgeting to coaching and mentoring.

"Training for managers has a dramatic, leveraging effect," says CIO Jim Hughes. "Good managers get a lot of work done."

Each year, Hughes and his team look at every individual employee in terms of upward potential and create development programs to build skills and leverage strengths based on stated career goals. For example, certain short-term assignments called rocket jobs are used to build skills and experience for different jobs.

Hughes says career development pays off. "The more we invest in people, the more we see in bottom-line results," he says.

Hughes follows up on individual development plans to see that they have been implemented, ties managers' performance reviews to their staffs' promotion rates and measures success through statistics on mobility and promotion from within. Last year, approximately a quarter of National City's IT staff moved up.

– Kathleen Melymuka

Internet Tax Prep Service, September 14

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Radical simplicity. Extraordinary flexibility. HP Blade servers are about to forever change the way you look at, manage and, yes, even maneuver through your data center.

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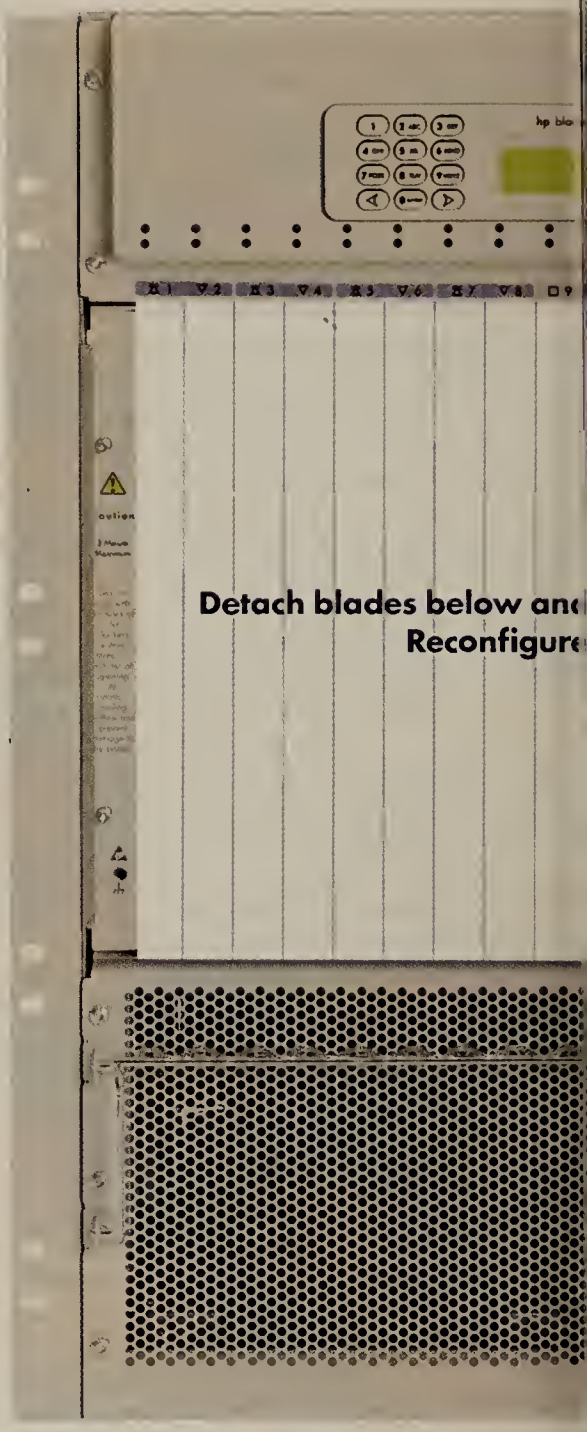

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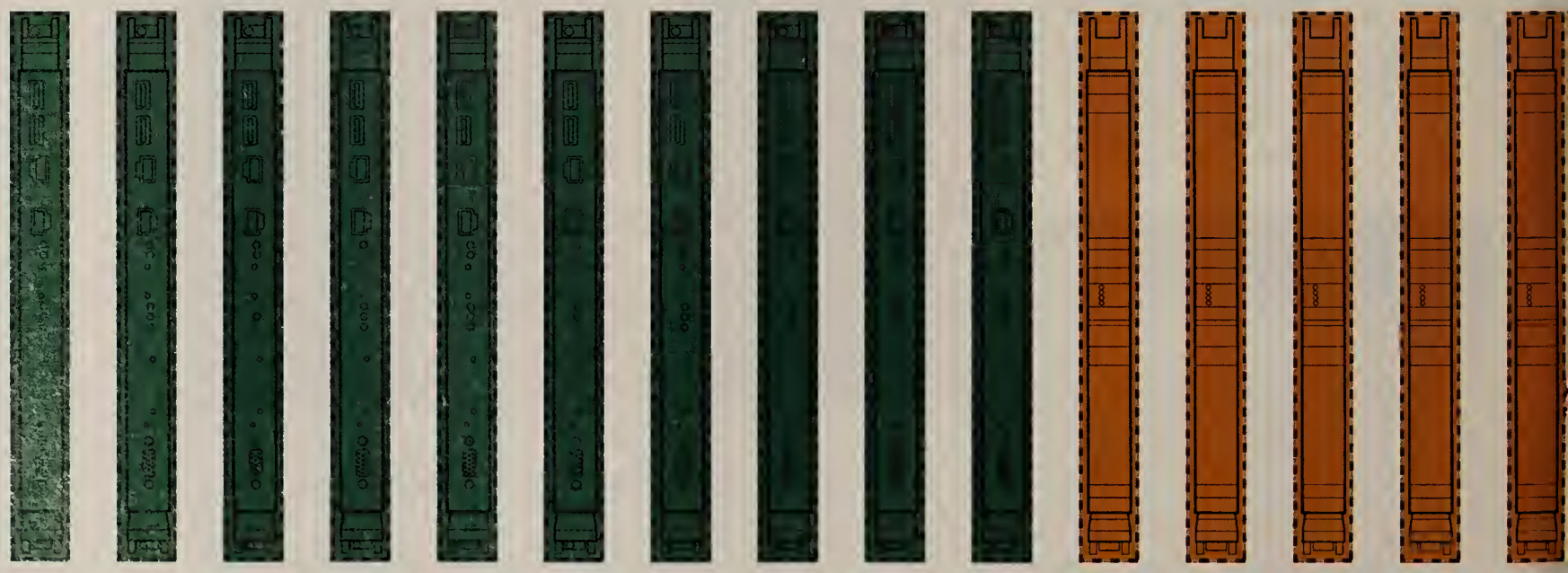
Each blade connects to the network infrastructure already embedded in the chassis, dramatically cutting the number of cables needed. With far fewer cables to fuss with, they're far easier to manage and maintain than conventional servers. Even management is shared. Which means all 38 blades can be viewed and monitored as a single system.

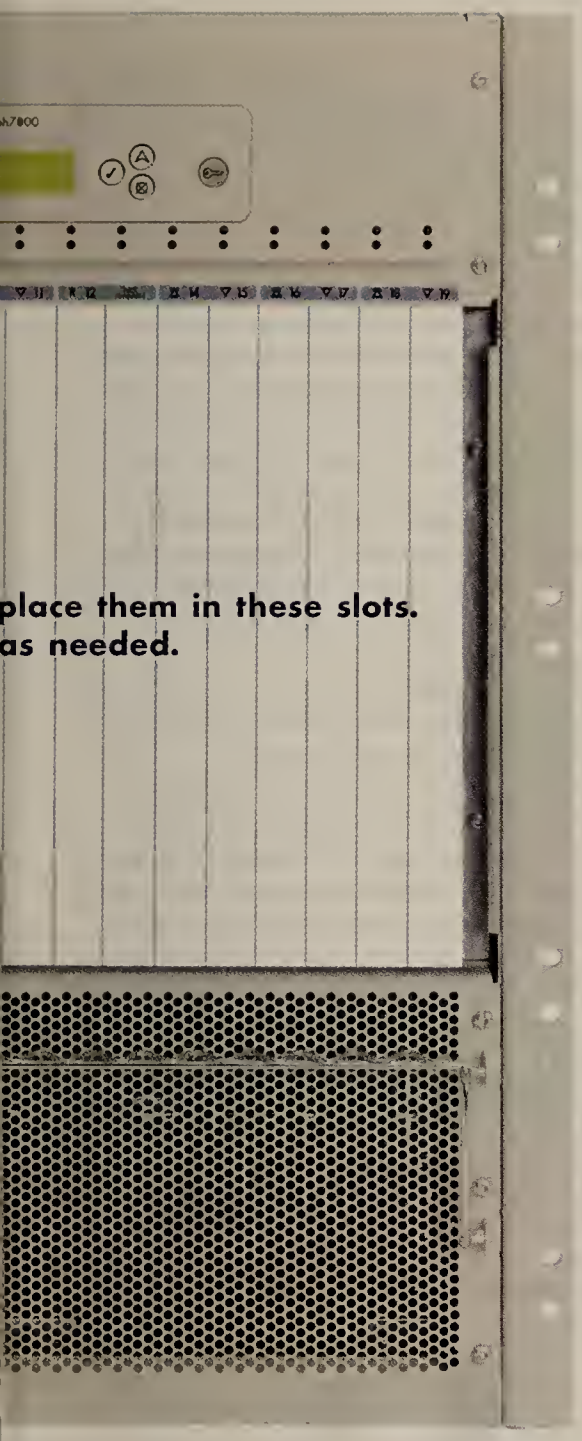
More efficient and reliable.

Since all blades in the chassis share the same power and cooling source, they're also more energy and space efficient. In fact, you'll find HP Blade servers



server blades

storage blades



reduce the typical number of fans and power supplies required by as much as 60%.

The reliability advantages of moving to blades are profound. To give you some perspective, imagine building a server cluster solution that is comparable to a fully loaded HP Blade server cabinet. The projected annual failure rate of the HP Blade server solution is about 41% lower than that of the comparable server cluster.

In the unlikely event that a blade should fail, the problem is isolated in the same way that multiple systems connected by I/O are isolated from each other.

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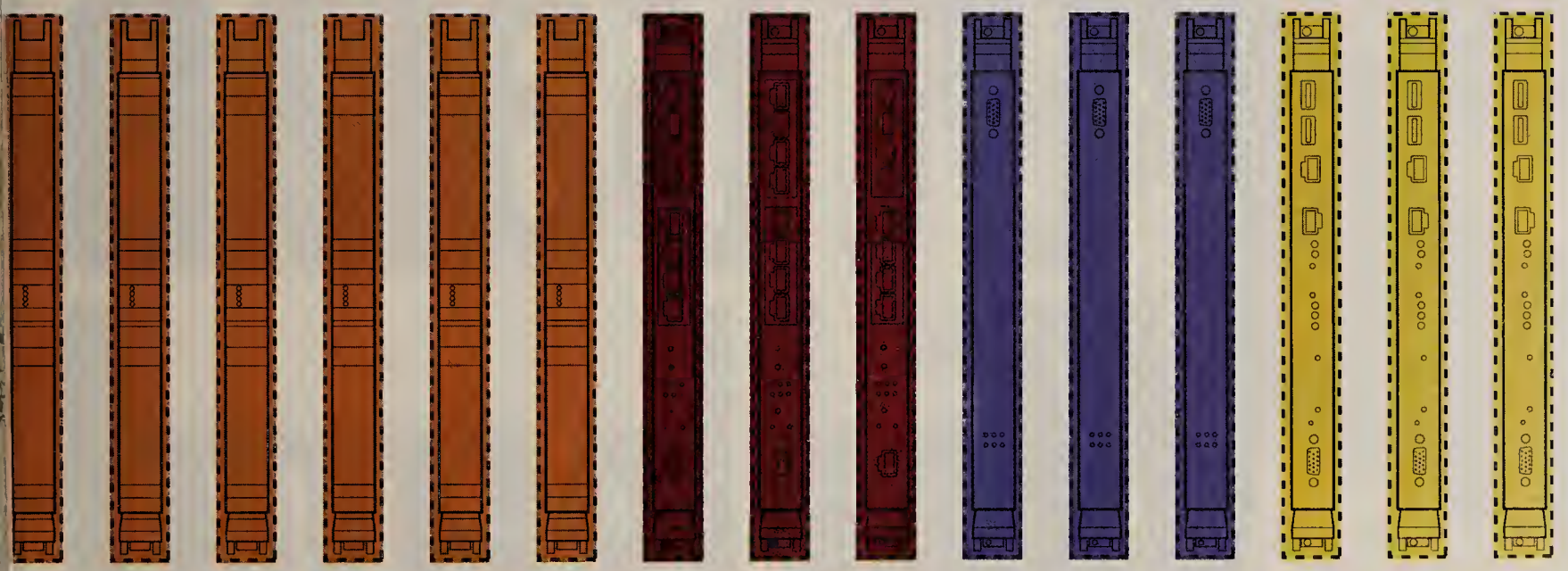

How to Provide Great Benefits

1. Make telecommuting viable by setting up technology for fast network connections.
2. Offer plenty of time off. Vacation time is always a welcome perk.
3. Offer extended leaves of absence for workers to pursue educational goals or fulfill lifelong dreams.
4. Get creative. Consider a concierge service that reduces daily hassles for traveling employees.

BENEFITS

With personal time at a premium, leading companies are offering flexible schedules and telecommuting benefits to keep IT workers content. By Minda Zetlin

Put Balan Work and

TWO YEARS AGO, STEVE SEIDNER, senior manager of technology planning at Georgia-Pacific Corp., a paper manufacturer and distributor in Atlanta, became the father of twins. He and his wife already had a 3-year-old, so the new arrivals meant even more demands on them as parents. In response, Seidner's company allowed him to occasionally work from home.

"I try to schedule my meetings so they don't fall every day of the week," Seidner says. "On the days when I don't have meetings, I can often work from home. I also work from home on snow days and on days after we've had a particularly bad night."

If he couldn't telecommute, Seidner says, he might have left his job at the company's downtown offices and looked for a position closer to his suburban home.

"It would have been a tough choice to continue working downtown because of the commute time — an hour each way," Seidner says. "Being able to work at home some days makes all the difference."

That's one reason why Georgia-Pacific ranked among *Computerworld*'s top 10 best employers for benefits (see page 52) and why other leading employers are able to hire and retain the industry's best staffers.

"I have three small children of my own, and I work at home occasionally," says Jim Hudak, CEO of UnitedHealth Technologies, a division of UnitedHealth Group Inc. in Minnetonka, Minn. "There's a big difference if you can be with your kids in your jammies, having a cup of coffee in the morning, instead of having to rush out the door. It's amazing how much more connected you can feel."

To make telecommuting viable for more managers, UnitedHealth Group is making virtual private networks available throughout the company. As a result, even some high-level IT employees can spend some of their time working from home.

"One member of my staff is running an $85 million development project, but she works at home every Friday because she has small children," Hudak says.

Offer Generous Vacation Time

Another way top companies attract and retain IT staffers is by giving them plenty of time off.

At Capital One Financial Corp. in Falls Church, Va., full-time employees get three weeks of paid vacation during their first year at the company and can take an extra 40 hours of vacation without pay if they choose. The hours are prorated based on salary and

are deducted from employees' paychecks in regular amounts over the entire year.

"The ability to have four weeks' vacation in a year is really extraordinary," says Laura Olle, senior vice president of IT at Capital One and the mother of a teenage daughter. "It's a big help when your children have spring breaks, winter breaks and so on."

Similarly, at PwC Consulting, an Edison, N.J.-based division of PricewaterhouseCoopers, employees receive 22 paid vacation days after their second year. "I don't think you find that in too many places," says Ed Pillard, a partner at the firm.

Let Workers Pursue Their Dreams

Some companies will provide extended leaves of absence so IT workers can pursue educational goals, or even fulfill their lifelong dreams.

"We have one long-term employee who really wanted to pursue his interest in astronomy," says John Moon, CIO at Baxter International Inc. in Deerfield, Ill. "He was able to take a sabbatical sponsored by Baxter."

This astronomy buff traveled the world for six months. "He worked at some of the most advanced astronomy centers," Moon says. Meanwhile, the employee was able to draw a partial salary, and his job was waiting for him when he returned.

And despite the tough economy, IT executives at these leading companies say they aren't cutting back on employee benefits.

"Many companies are cutting their 401(k) contributions — we paid 100% of our match," says Hudak. UnitedHealth also offers stock options based on employee performance, and even in this down market, the share price has risen from approximately $25 to about $70 in the past two years, he says. "I just went to a party at someone's new house that the person bought with the help of stock options," says Hudak.

"Downgrading our benefits doesn't enter our thinking," says George McKinnon, vice president and CIO at Nationwide Mutual Insurance Co. in Columbus, Ohio. And the current glut of job candidates isn't changing the company's retention strategy, he adds.

"Whether there are 100 people out there or 1,000, we still need to attract the best," McKinnon says.

Zetlin is a freelance writer in Woodstock, N.Y.

No Place Like Home

PwC Consulting is helping its IT employees gain flexibility in their schedules with two innovative initiatives:

"More Nights at Home" Many PwC employees are consultants who must spend weeks at a time working at client locations across the country. This program lets them cut down on their time away.

"It allows people to travel on Monday morning rather than Sunday evening to get to a client site," says Ed Pillard, a partner at PwC Consulting. "They work late Monday, Tuesday and Wednesday, then leave the client's office sometime Thursday evening and work from home or the home office on Friday."

The idea is that not all of the work needs to be done at the client's site. And this way, employees can sleep in their own beds four nights out of the week instead of two.

PwC solicits its clients' agreement for the adjusted schedule, and most have welcomed it, Pillard says.

"We drive people pretty hard, and we strive to attract and retain the best ones," he says.

"At Your Service" This program was designed to take some of the sting out of being away from home.

"It's a concierge service in a hotel format," Pillard says. "It's helpful when consultants are out of town and things need to get done."

The concierges can arrange for everything from walking an employee's dog to letting a cable installer into a home.

"So if you're on a four- or five-day trip, before you get home, you can have your refrigerator stocked and your dry cleaning picked up," Pillard says. PwC's employees pay a small fee for the concierge service, but much of the cost is covered by the company.

– Minda Zetlin

A CUT ABOVE THE REST

Best employers go beyond regular benefits, offering extensive financial assistance when employees adopt children.

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ce in Home Life

"EVERY DAY, I work with someone who is very different from me. Not just in the way we look, but in the way the person thinks," says Anh Nguyen of Freddie Mac.

DOUGLAS WOODS

Companies that work to achieve diversity go far beyond race and religion. They value differences in views, styles and contributions. By Melissa Solomon

Create Diversity in Cu

ANH NGUYEN had been at Freddie Mac only about a year when she came up with an idea to change the way her team operated.

"I felt that we should break the Unix group into two," Nguyen says. One team would handle day-to-day support and the other long-term infrastructure planning.

Not only was her idea accepted, but she was also put in charge of the long-term infrastructure team at the McLean, Va.-based company, which provides funds to mortgage lenders.

DIVERSITY

"I felt that I was able to be part of deciding how we evolve as a group," says Nguyen, who adds that Freddie Mac's diverse culture makes her feel free to come forward with new ideas.

"I think diversity's important to me because I'm Asian; I'm a woman," Nguyen says. But she points out that diversity isn't just about hiring or giving opportunities to those with obvious differences, such as in culture, race or gender. "Every day, I work with someone who is very different from me. Not just in the way we look, but in the way the person thinks," she says.

That variety of viewpoints is what drives the companies ranked among *Computerworld*'s top 10 best employers for diversity (see page 56). For them, diversity isn't just about having politically correct demographics; it's also about fostering a culture that values individuals and their wide array of needs and contributions. An added benefit, the companies say, is that the returns from a business perspective can be tremendous.

"To not value diversity in a global field just does not make good business sense," says Carl Langaigne, human resources manager for IT at Southern California Edison in Rosemead, Calif.

As a federal contractor, Arlington, Va.-based Software Performance Systems Inc. (SPS) is obligated to mirror its home state's demographics. But that's never been hard, says Ashley Zakas, vice president of human resources. "It's just become an innate part of our organization," she says.

Small Steps for Big Gains

Employees at Software Performance Systems – Joanie Barr, vice president of software solutions; Rosa Caldas, IT project manager; and Ashley Zakas, vice president of human resources – offer the following advice for developing a diverse staff:

■ **When interviewing job candidates, be patient.** Listen carefully to those with heavy accents, for example. By the same token, it's important to overlook style differences on résumés.

■ **Create a culture that welcomes people from different backgrounds.** For example, the team that Caldas manages is one of the most diverse at SPS and is particularly tolerant of those who might not be able to get their point across as smoothly as others because of language barriers.

"When [foreign workers] come to the United States, most of them have to learn English," Caldas explains. "So they have all faced the same language challenges and learning curves . . . regardless of what their first language is."

■ **After making your first hires, watch those seeds of diversity grow.** There are now 11 nationalities represented in SPS's staff, and the company's diversity recruitment has snowballed, says Zakas. Management hired a diverse staff early on, and employees have since referred friends and family, adding to the mix, says Zakas.

"One of the things that has made us so successful is not just talking about it, but doing it," Caldas says.

– *Melissa Solomon*

Matching the demographics of a community isn't hard, unless of course, you're not trying, Zakas says.

Developing a diverse workforce reduces turnover and casts a wider net for recruiting talented workers, says Keith Early, vice president of employment practices at Freddie Mac. "People don't want to come or stay at a workplace that does not look like them," he explains.

Years ago, IT recruitment efforts at Southern California Edison were fairly narrow, focusing mainly on men because IT has traditionally been a predominantly male profession, says Langaigne. Now Edison's IT unit studies quarterly workforce statistics and actively recruits within groups that are under-represented, he says.

Just being open to the pool of candidates from the community goes a long way, says Mike Pinter, director of infrastructure services at Edison. "You could almost say Southern California's like a melting pot, and we do try to emulate that," he says.

That principle also helps to foster diverse leaders, says Mahvash Yazdi, senior vice president and CIO at Edison International and Southern California Edison. When a few key positions are filled with people of diverse backgrounds, it has a ripple effect, she says. "It's kind of like paying it forward," says Yazdi, who practices what she preaches. As an Iranian woman and one of 10 leaders who craft the company's strategies, she sends a strong message that everyone has a chance to succeed.

Develop Targeted Training

Freddie Mac measures up to its diversity goals. Its staff is 15% black, 3.5% Hispanic, nearly 13% Asian/Pacific Islander and 56% female, says Early. "So we are diverse," he says. "But the numbers only tell part of the story. Getting people to come to Freddie Mac is one thing. Getting them to stay is another."

To engage its IT workers, Freddie Mac offers an annual leadership training program to 16 to 18 potential managers, in addition to its regular mentoring and professional development programs, says Early.

Diversity training is also critical, says Edison's Pinter. Before he went through such training, Pinter says he didn't notice certain subtleties, such as nonassertive workers being passed over for prestigious projects. "Now it's second nature," he says.

"Some people are from very humble backgrounds and don't toot their own horns," adds Joanie Barr, vice president of software solutions at SPS. It's up to managers to notice when such employees deserve a performance bonus, special recognition or even just a thank-you note, she says.

Diversity training can cover a variety of topics, but a common theme is awareness. At Atlanta-based BellSouth Corp., participants are asked to list common stereotypes for particular groups. When they're all compiled, it's hard to miss the fact that 99% of those stereotypes are negative, says Ron Frieson, vice president and chief diversity officer.

"It's an eye-opening experience," Frieson says. "By the time you go through that gut-wrenching experience, people are aware."

At Edison, managers learn to accommodate workers with physical disabilities and unique needs. For example, Pinter manages a programmer who lost her sight, so he provided her with voice-recognition equipment. "You have a group of people working for you, but they are individuals," says Pinter.

Last year, Edison finished a 15-month diversity training that reached each of the company's 12,000 employees, says Stacy Mines, manager of equal employment opportunities. All new hires will be trained within six months of their start dates, she adds. "Many companies say 'Oh, that's so expensive,' and it is," she says. But it's a priority, she adds. And Edison trained internal facilitators to cut back on the cost, adds Mines.

The final step of a successful diversity program is a measurement system, says Frieson. BellSouth uses a four-quadrant balanced scorecard to measure diversity: The first measures diversity in terms of actual numbers. The second looks at the amount and success of education and learning programs. The third weighs the effectiveness of programs and policies that create and foster diversity (domestic partner benefits, for example). And the fourth looks at the financial contribution and productivity of each unit to ensure that diversity policies push operations in a positive direction, says Frieson.

"Diversity doesn't happen overnight," says Debbie Freedman, president of BellSouth Technologies Inc., BellSouth's separately incorporated IT arm. "People have to be committed to it as the goal for the long term." ◗

How to Attract a Diverse Workforce

1. Place ads in magazines aimed at people from different backgrounds.
2. Sponsor and participate in career shows geared toward minority groups.
3. Develop internship programs that solicit minority applicants.
4. Track diversity statistics for your region and work to match them.

LEARN HOW IT'S DONE

Top employers offer more tips on creating and fostering a diverse workplace:

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RETENTION

Build a Long-Term Work Relationship

Give your IT staff a sense of family and an exciting work environment and they'll have little reason to leave. By Mark Hall

DARRELL HARRELL HAS YELLOW blood running through his veins. It's not something that keeps him bedridden, but it does keep him rooted to his employer.

"It's a combination of a sense of family here, along with constant IT challenges and opportunities, that keeps me," says Harrell, an IT manager at Caterpillar Inc., which sports a bright yellow company logo. "That's what we call 'yellow blood.' "

Like many IT workers who stay at a company for long stretches — even their entire careers — Harrell says he's excited about more than just his work. The Peoria, Ill.-based heavy equipment maker provides an atmosphere that fuels career growth and personal satisfaction.

That's why Harrell has stayed in Caterpillar's IT department for 15 years. It's also why the $20 billion company has a turnover rate of just 2%, earning it a spot in *Computerworld*'s top 10 best places for retention (see page 56).

Harrell got his first drops of yellow blood the week before he started his job. Caterpillar assigned him a mentor, who invited him over to his house for a social occasion, breaking the ice in a casual setting.

Harrell was then assigned to a small group of other newcomers in IT, who together learned the ins and outs of the company and honed their skills. And 15 years later, he still meets with them about once a quarter. "It's family," Harrell says.

Show Respect for Workers

Caterpillar and other leading IT employers are able to retain their workers because they offer more than good jobs, says Howard Adamsky, author of

Continued on page 48

How to Hold On To Top Workers

1. Offer access to challenging IT projects and a variety of assignments with different technologies.
2. Keep avenues open for movement within the IT department and the company.
3. Listen, and anticipate the challenges IT workers face at different stages of their careers.
4. Survey staff to learn what they want and balance their needs with those of the company.

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NAP214

Continued from page 46

Hiring and Retaining Top IT Professionals (McGraw-Hill, 2001). "It's not so much what you do as a company; it's what you are as a company," says Adamsky, founder and president of HR Innovators Inc. in Stow, Mass.

For Ruta Ozers, an IT consultant at International Truck and Engine Corp., the Warrenville, Ill.-based manufacturer exemplifies what's best in a company through "its respect for people."

"When someone has a family member who's sick or they need to stay home for an important reason, management doesn't make you feel guilty," Ozers says. "And others pitch in to help get your work done. There's a real value here around family."

Creating a great place to work means listening to your staff and understanding what it's like to be in their shoes at different stages in their career, says Ergin Uskup, CIO at United Stationers Inc. in Des Plaines, Ill. He says he tells his managers to "imagine yourself as a 28-year-old programmer or a 30-year-old network analyst. Know what's important to them. Know what they value."

Uskup surveys his staff twice a year to learn precisely what they want, determine what's right for the company and its employees, and then get it done. That's helped keep his department's churn to a mere 4%.

Like Uskup, Jeff Spar, CIO at The Reader's Digest Association Inc., which has a 5% IT staff turnover, polls his global staff twice a year. Among other things, he learns that IT professionals want to be excited about technology, in addition to wanting a nice place to work.

"They can get bored," Spar says, which is why there's a lot of excitement these days at the Pleasantville, N.Y.-based publisher as it moves from its mainframe systems to distributed Oracle-based applications.

Diversify Challenges

Variety on the job is a sentiment almost everyone echoes. "I like the flexibility of being able to work on multiple platforms," says Bill Robertson, senior business systems analyst at Harrah's Entertainment Inc. in Las Vegas. He says the project-oriented work at Harrah's "keeps everything fresh."

In just the past year and a half, Robertson has applied his financial development skills in diverse technical environments such as Unix client/server, Java-based Web systems and a massive Teradata Corp. database application.

Convenient and Casual

The Reader's Digest Association provides employees who work at its headquarters with services normally found in shopping malls. Workers can drop off clothes for dry cleaning, go shopping or get haircuts without leaving the company campus.

"It's a comfortable place to work and to manage your personal life," says CIO Jeff Spar. "It's important to keep perspective."

In addition to these conveniences, Spar says he focuses on "exciting people in their job." Part of this entails making the work itself engaging, but it also means establishing a rapport up and down the IT organization. So Spar has eliminated as much structure as possible and keeps his door open, literally, so everyone feels comfortable enough to walk in and chat.

"We don't have a bunch of programmers programming and a bunch of managers managing," he says. "We encourage flexibility and new ideas."

– Mark Hall

"I'm not put in one little corner," he says.

Harrell brags that in the 15 years he's been at Caterpillar, he's averaged only two years on any particular job. "There's loads of opportunities to work in different areas with lots of possibilities for your career," he says.

Spar cautions that it's important to not throw people into new situations where they can fail and hurt the company. That's why at Reader's Digest, he makes sure that people are moved to new roles through job-sharing when they're ready to take on new challenges.

"This is particularly useful for younger people who are trying to break through to the next career level," Spar says. They get to work with someone who's already mastered the tasks, so they're more likely to learn faster, he says.

"IT people want to work on the edge with high-profile projects. But ultimately, they will want to move on," Adamsky says. "That doesn't mean they have to leave the company. So the only thing you can do is keep them working on one more project for one more client." ◗

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COMPUTERWORLD The Best Places to Work in IT

The Top 100 U.S. Employers

Career Development

The Top 10

RANK	EMPLOYER
1	National Marrow Donor Program
2	United Stationers Inc.
3	Wal-Mart Stores Inc.
4	Hewitt Associates LLC
5	The Home Depot Inc.
6	National City Corp.
7	Household International Inc.
8	AFLAC Inc.
9	GlaxoSmithKline PLC
10	University of Miami

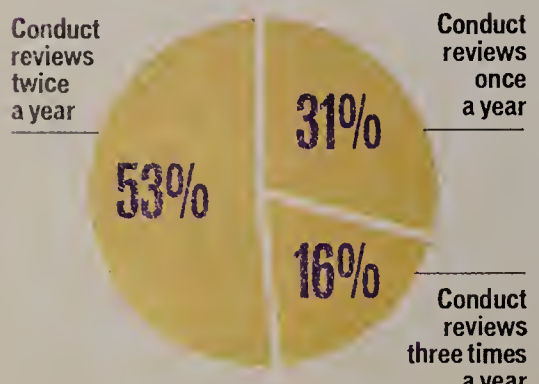
30%
Average percentage of IT workers promoted in 2001 at the Top 10 Best Places for career development.

16%
Average percentage of IT workers promoted in 2001 at the Top 100 Best Places.

100%
Percentage of the Top 10 Best Places for career development that offer mentoring programs.

72%
Percentage of the Top 100 Best Places that offer mentoring programs.

FREQUENCY OF IT STAFF EVALUATIONS AMONG THE TOP 100 BEST PLACES



RANK	EMPLOYER	WEB ADDRESS	INDUSTRY	NUMBER OF IT STAFF
1	**University of Miami** Coral Gables, Fla.	*www.miami.edu*	Education	101 to 500
2	**State Farm Insurance Cos.** Bloomington, Ill.	*www.statefarm.com*	Insurance	500-plus
3	**Avon Products Inc.** New York	*www.avon.com*	Consumer products, direct sales	500-plus
4	**Fannie Mae** Washington	*www.fanniemae.com*	Financial services	500-plus
5	**Cabot Corp.** Boston	*www.cabot-corp.com*	Chemicals	101 to 500
6	**The Home Depot Inc.** Marietta, Ga.	*www.homedepot.com*	Retail	500-plus
7	**Harrah's Entertainment Inc.** Las Vegas	*www.harrahs.com*	Entertainment/ recreation	101 to 500
8	**The Reader's Digest Association Inc.**, Pleasantville, N.Y.	*www.rd.com*	Publishing and direct marketing	101 to 500
9	**Comerica Inc.** Detroit	*www.comerica.com*	Banking	500-plus
10	**National Information Solutions Cooperative Inc.**, Mandan, N.D.	*www.nisc.cc*	Utility consulting	101 to 500
11	**State Street Corp.** Quincy, Mass.	*www.statestreet.com*	Financial services	500-plus
12	**Symbol Technologies Inc.** Holtsville, N.Y.	*www.symbol.com*	Computer hardware and software	101 to 500
13	**Harley-Davidson Inc.** Milwaukee	*www.harley-davidson.com*	Motorcycle manufacturing	101 to 500
14	**United Stationers Inc.** Des Plaines, Ill.	*www.united stationers.com*	Wholesale	101 to 500
15	**American Electric Power Co.** Columbus, Ohio	*www.aep.com*	Utility	500-plus
16	**Nationwide Mutual Insurance Co.** Columbus, Ohio	*www.nationwide.com*	Insurance	500-plus
17	**Wal-Mart Stores Inc.** Bentonville, Ark.	*www.walmart.com*	Retail	500-plus
18	**Freddie Mac** McLean, Va.	*www.freddiemac.com*	Financial services	500-plus
19	**Corning Inc.** Corning, N.Y.	*www.corning.com*	Telecommunications	500-plus
20	**PwC Consulting** Edison, N.J.	*www.pwc consulting.com*	IT consulting	500-plus

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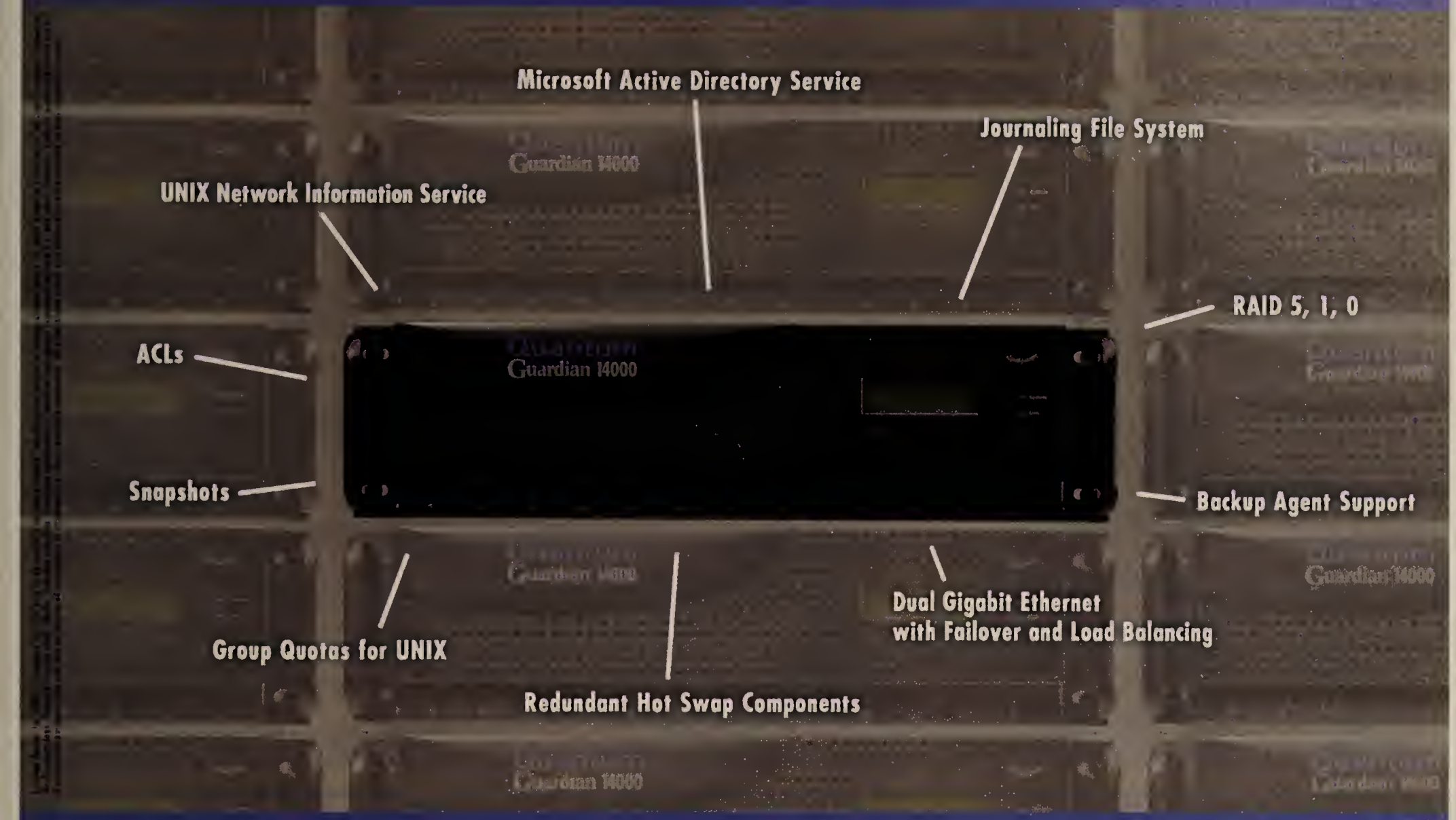

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BEST PLACES TO WORK

Training

The Top 10

RANK	EMPLOYER
1	CenterBeam Inc.
2	Cabot Corp.
3	Appraisal.com Inc.
4	Avon Products Inc.
5	Symbol Technologies Inc.
6	USAA
7	Towers Perrin
8	Harrah's Entertainment Inc.
9	American Electric Power Co.
10	University of Miami

13
Average days of training set aside for IT workers at the Top 10 Best Places for training.

$10,750
Average amount earmarked for training for each IT worker at the Top 10 Best Places for training.

Benefits

The Top 10

RANK	EMPLOYER
1	PwC Consulting
2	UnitedHealth Group Inc.
3	Georgia-Pacific Group
4	Capital One Financial Corp.
5	Symbol Technologies Inc.
6	Nationwide Mutual Insurance Co.
7	Baxter International Inc.
8	Gartner Inc.
9	International Truck and Engine Corp.
10	Ceridian Corp.

THE BENEFITS OFFERED MOST OFTEN BY THE 100 BEST PLACES

1. 401(k) plans
2. Flexible hours
3. College tuition reimbursement
4. Continuing/executive education programs

The Top 100 U.S. Employers

RANK	EMPLOYER	WEB ADDRESS	INDUSTRY	NUMBER OF IT STAFF
21	**USAA** San Antonio	*www.usaa.com*	Financial services	500-plus
22	**Baxter International Inc.** Deerfield, Ill.	*www.baxter.com*	Health care	500-plus
23	**Towers Perrin** Stamford, Conn.	*www.towers.com*	Professional services/ consulting	500-plus
24	**FedEx Corp.** Collierville, Tenn.	*www.fedex.com*	Transportation	500-plus
25	**UnitedHealth Group Inc.** Minnetonka, Minn.	*www.unitedhealthgroup.com*	Health care	500-plus
26	**Capital One Financial Corp.** Falls Church, Va.	*www.capitalone.com*	Financial services	500-plus
27	**Schneider National Inc.** Green Bay, Wis.	*www.schneider.com*	Transportation	101 to 500
28	**Sears, Roebuck and Co.** Hoffman Estates, Ill.	*www.sears.com*	Retail, financial and home services	500-plus
29	**Minnesota Life Insurance Co.** St. Paul, Minn.	*www.minnesotamutual.com*	Insurance	101 to 500
30	**Edison International and Southern California Edison**, Rosemead, Calif.	*www.sce.com*	Utility	500-plus
31	**Gtech Holdings Corp.** West Greenwich, R.I.	*www.gtech.com*	Government	500-plus
32	**Electronic Data Systems Corp.** Plano, Texas	*www.eds.com*	Professional services/ IT consulting	500-plus
33	**The MONY Group Inc.** Syracuse, N.Y.	*www.mony.com*	Financial services	101 to 500
34	**Hewitt Associates LLC** Lincolnshire, Ill.	*www.hewitt.com*	Professional services/ IT consulting	500-plus
35	**West Group** Eagan, Minn.	*www.westgroup.com*	Electronic information provider	500-plus
36	**OCLC Online Computer Library Center Inc.**, Dublin, Ohio	*www.oclc.org*	Library information services	101 to 500
37	**CenterBeam Inc.** Santa Clara, Calif.	*www.centerbeam.com*	IT consulting	51 to 100
38	**J.B. Hunt Transport Services Inc.** Lowell, Ark.	*www.jbhunt.com*	Transportation	101 to 500
39	**Georgia-Pacific Group** Atlanta	*www.gp.com*	Forest and paper products	500-plus
40	**Best Buy Co.** Eden Prairie, Minn.	*www.bestbuy.com*	Retail	500-plus
41	**FleetBoston Financial Corp.** Boston	*www.fleet.com*	Financial services	500-plus
42	**General Mills Inc.** Minneapolis	*www.generalmills.com*	Food	101 to 500
43	**Accelio Corp.** Plano, Texas	*www.accelio.com*	Computer software	26 to 50
44	**Comark Inc.** Bloomingdale, Ill.	*www.comark.com*	Computer hardware	51 to 100
45	**Saint Luke's Shawnee Mission Health System Inc.**, Kansas City, Mo.	*www.saint-lukes.org*	Health care	101 to 500
46	**Allstate Insurance Co.** Northbrook, Ill.	*www.allstate.com*	Insurance	500-plus
47	**National City Corp.** Cleveland	*www.nationalcity.com*	Financial services	500-plus

Continued on page 56

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Ask about 60 DAYS same-as-cash for qualified customers[30]

***PC Magazine* Editors' Choice Award**
Small Business Solutions
– April 2002

Dell | Small Business

PowerEdge™ 1500SC Server

NEW Simple and Strong Tower Server
- **Intel® Pentium® III Processor at 1.13GHz**
- Dual Processor Capable
- 12BMB 133MHz ECC SDRAM (up to 4GB)
- 1BGB[5] (10K RPM) Hot-Swap Ultra3 SCSI Hard Drive
- Embedded Dual-Channel Ultra3 SCSI Controller
- Embedded Intel® PRD Gigabit NIC
- 1-Yr Next Business Day On-Site Service,[3] 1-Yr Limited Parts Warranty,[2] 1-Yr 24x7 Dedicated Server Phone Tech Support

$1299 or as low as **$37**/mo., 46 payments.[30] 60 days same-as-cash for qualified customers.
E-VALUE Code: 11475-290512

Recommended upgrades:
- NEW PowerConnect™ 2124* 24-Port Unmanaged Switch with Gigabit Port, add $299
- **System Including Small Business Server 2000 and Memory Upgrade to 256MB is $2699**

PowerEdge™ 2500 Server

Robust and Scalable Tower Server
- **Intel® Pentium® III Processor at 1.13GHz**
- Dual Processor Capable
- 12BMB 133MHz ECC SDRAM (up to 6GB)
- 1BGB[5] (10K RPM) Hot-Swap Ultra3 SCSI Hard Drive
- Embedded Dual-Channel Ultra3 SCSI Controller
- Embedded Intel® 10/100 NIC
- Hot-Swap, Redundant Cooling Fans
- Dptional Hot-Swap, Redundant Power Supplies
- Optional Embedded Dual-Channel RAID Solution
- 3-Yr Next Business Day On-Site Service[3]

$1899 or as low as **$54**/mo., 46 payments.[30] 60 days same-as-cash for qualified customers.
E-VALUE Code: 11475-290518

Recommended upgrades:
- PowerConnect™ 3024* 24-Port Managed Switch, add $699
- **System Including Windows® 2000 Server is $2699**

PowerEdge™ 1650 Server

NEW Highly Available 1U Rack-Optimized Server
- **Intel® Pentium® III Processor at 1.13GHz**
- Dual Processor Capable
- 12BMB 133MHz ECC SDRAM (up to 4GB)
- 1BGB[5] (1DK RPM) Hot-Swap Ultra3 SCSI Hard Drive
- Dual Embedded Gigabit NICs
- Hot-Swap, Redundant Cooling Fans
- Dptional Embedded Dual-Channel RAID Solution
- Dptional Redundant Power Supplies
- 3-Yr Next Business Day Dn-Site Service[3]

$1699 or as low as **$48**/mo., 46 payments.[30] 60 days same-as-cash for qualified customers.
E-VALUE Code: 11475-290516

Recommended upgrade:
- **System Including Windows® 2000 Server is $2499**

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NEW NAS File Sharing Storage
- Offloads Storage Load from Desktops and Servers
- Snap Shot Capability for Backing up Stored Data
- Intel® Celeron® Processor at 900MHz
- 256MB SDRAM (up to 512MB)
- 160GB IDE Hard Drive – Four 40GB Bays
- Dual 10/100 Ethernet Ports
- SCSI Port for Local Backup
- Multi-Platform Support of PC, Unix, Apple, and Novell
- Powered by Windows® Operating System
- 1-Yr Next Business Day On-Site Service,[3] 3-Yr Limited Parts Warranty,[2] Lifetime 24x7 Dedicated Server Phone Tech Support

$1799 or as low as **$51**/mo., 46 payments.[30] 60 days same-as-cash for qualified customers.
E-VALUE Code: 11475-290517n

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[2]For a copy of our Guarantees or Limited Warranties, write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, Texas 78682. [3]Service may be provided by third party. Technician will be dispatched, if necessary, following phone-based troubleshooting. To receive Next-Business-Day service, Dell must notify service provider before 5 pm (depending on service contract) customer's time. Availability varies. [5]For hard drives, GB means 1 billion bytes; accessible capacity varies with operating environment. [30]Monthly payment is based on a 48-month 12.99% interest rate for qualified business customers. Your interest rate and monthly payment may be same or higher, depending on your creditworthiness. Minimum transaction size of $500 is required. Maximum aggregate financed amounts not to exceed $25,000. Under 60 Days Same-As-Cash QuickLoan, interest accrues during first 60 days after the QuickLoan's Commencement Date (which is five days after product ships) if balance is not paid within those 60 days. STATED INTEREST RATE AND 60 DAYS SAME-AS-CASH QUICKLOAN ARE FOR QUALIFIED ONLINE BUSINESS CUSTOMERS. OFFER VARIES BY CREDITWORTHINESS OF CUSTOMER AS DETERMINED BY LENDER. Taxes, fees and shipping charges are extra and may vary. Not valid on past orders or financing. QuickLoan is from CIT OnLine Bank to Dell Small Business (BSD) online customers with approved credit. Dell, the stylized E logo, E-Value, PowerEdge, PowerConnect and PowerVault are trademarks of Dell Computer Corporation. Intel, Intel Inside and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. ©2002 Dell Computer Corporation. All rights reserved.

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Diversity

The Top 10

RANK	EMPLOYER	% OF FEMALE IT EMPLOYEES	% OF MINORITY IT EMPLOYEES
1	Freddie Mac	43%	41%
2	Edison International and Southern California Edison	36%	49%
3	University of Miami	38%	61%
4	Fannie Mae	47%	49%
5	Sigma-Aldrich Co.	40%	50%
6	The Reader's Digest Association Inc.	40%	20%
7	BellSouth Corp.	42%	27%
8	Software Performance Systems Inc.	35%	25%
9	USAA	41%	40%
10	The Home Depot Inc.	34%	25%

Retention

The Top 10

RANK	EMPLOYER	% OF IT TURNOVER IN 2001	EMPLOYEES' AVERAGE NUMBER OF YEARS IN IT
1	Caterpillar Inc.	2%	27
2	International Truck and Engine Corp.	4%	16
3	University of Miami	5%	15
4	State Farm Insurance Cos.	4%	14
5	National Information Solutions Cooperative	5%	12
6	Cabot Corp.	3%	8
7	Harrah's Entertainment Inc.	2%	7
8	The Reader's Digest Association Inc.	5%	8
9	Symbol Technologies Inc.	1%	9
10	United Stationers Inc.	4%	10

99% of the Top 100 Best Places offer flexible hours.

92% of the Top 100 Best Places offer employee-assistance programs.

90% of the Top 100 Best Places offer telecommuting options.

86% of the Top 100 Best Places conduct annual employee-satisfaction surveys.

Continued on page 58

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BEST PLACES TO WORK

Hot Projects

The Top 10

RANK	EMPLOYER
1	State Farm Insurance Cos.
2	Harley-Davidson Inc.
3	FedEx Corp.
4	Gtech Holdings Corp.
5	Electronic Data Systems Corp.
6	Principal Financial Group Inc.
7	Kanbay Inc.
8	Ceridian Corp.
9	Arrow Electronics Inc.
10	Capital One Financial Corp.

Among the Top 100 Best Places . . .

THE MOST-CITED BUSINESS-CRITICAL IT PROJECTS UNDERTAKEN DURING THE PAST 12 MONTHS

Customer service/customer relationship management	86%
Security	85%
Web site development	83%
E-business infrastructure/ B2B/business-to-consumer	82%
E-business	79%
Data management/business intelligence	76%

THE MOST-CITED BUSINESS-CRITICAL IT PROJECTS PLANNED FOR THE NEXT 12 MONTHS

Security	86%
Customer service/customer relationship management	81%
Data management/ business intelligence	78%
E-business infrastructure/ B2B/business-to-consumer	77%
E-business	73%
Web site development	70%

The Top 100 U.S. Employers

RANK	EMPLOYER	WEB ADDRESS	INDUSTRY	NUMBER OF IT STAFF
48	**Principal Financial Group Inc.** Des Moines, Iowa	*www.principal.com*	Financial services	500-plus
49	**Aetna Inc.** Hartford, Conn.	*www.aetna.com*	Insurance	500-plus
50	**The PNC Financial Services Group Inc.**, Pittsburgh	*www.pnc.com*	Financial services	500-plus
51	**Caterpillar Inc.** Peoria, Ill.	*www.cat.com*	Manufacturing	500-plus
52	**National Marrow Donor Program** Minneapolis	*www.marrow.org*	Health care	51 to 100
53	**Burlington Coat Factory Warehouse Corp.**, Burlington, N.J.	*www.coat.com*	Retail	101 to 500
54	**Kraft Foods Inc.** Northfield, Ill.	*www.kraft.com*	Food	500-plus
55	**Kanbay Inc.** Rosemont, Ill.	*www.kanbay.com*	Professional services/IT consulting	51 to 100
56	**Household International Inc.** Prospect Heights, Ill.	*www.household.com*	Financial services	500-plus
57	**AFLAC Inc.** Columbus, Ga.	*www.aflac.com*	Insurance	101 to 500
58	**Bose Corp.** Framingham, Mass.	*www.bose.com*	Consumer electronics	101 to 500
59	**Forsythe Technology Inc.** Skokie, Ill.	*www.forsythetech.com*	Computer services	11 to 25
60	**United Parcel Service Inc.** Mahwah, N.J.	*www.ups.com*	Transportation	500-plus
61	**SuperValu Inc.** Eden Prairie, Minn.	*www.supervalu.com*	Wholesale	500-plus
62	**LexisNexis** Miamisburg, Ohio	*www.lexisnexis.com*	Publishing services	500-plus
63	**CIGNA Corp.** Philadelphia	*www.cigna.com*	Insurance	500-plus
64	**GMAC Commercial Mortgage Corp.**, Horsham, Pa.	*www.gmaccm.com*	Financial services	101 to 500
65	**Lands' End Inc.** Dodgeville, Wis.	*www.landsend.com*	Retail	101 to 500
66	**MindTree Consulting** Somerset, N.J.	*www.mindtree.com*	IT consulting	101 to 500
67	**Staples Inc.** Framingham, Mass.	*www.staples.com*	Retail	500-plus
68	**GlaxoSmithKline PLC** Philadelphia	*www.gsk.com*	Pharmaceuticals	500-plus
69	**Edward Jones** St. Louis	*www.edwardjones.com*	Financial services	500-plus
70	**Intel Corp.** Santa Clara, Calif.	*www.intel.com*	Computer hardware	500-plus
71	**Gartner Inc.** Stamford, Conn.	*www.gartner.com*	Professional services/IT consulting	101 to 500
72	**International Truck and Engine Corp.**, Warrenville, Ill.	*www.international delivers.com*	Automotive	500-plus
73	**Galileo International Inc.** Greenwood Village, Colo.	*www.galileo.com*	Global travel/ distribution	500-plus
74	**Ceridian Corp.** Atlanta	*www.ceridian.com*	Computer services	500-plus

Continued on page 60

WebSphere. software

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2. That accessed the Account
3. That linked with the Database
4. That verified the Deposit
5. That released the Funds
6. That paid the Loan
7. That updated the Records
8. That triggered the Statement
9. That completed the Process
10. That lives in the Business Integration Software
11. That we built Together.

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BEST PLACES TO WORK

Methodology

How We Chose 100 Best Places U.S.

COMPUTERWORLD The Best Places to Work in IT

For the ninth year in a row, *Computerworld* conducted a survey to identify the 100 best places to work for IT professionals. From October through December 2001, *Computerworld* invited CIOs, vice presidents and IT directors at U.S.-based companies to participate. The participants submitted information about their IT organizations online at *Computerworld.com.*

Computerworld's 75-question survey asked about the organizations' training and development, average salary increases, percentage of staff promoted, turnover rates and the percentage of women and minority employees on staff and in IT management positions. In addition, information was collected on each organization's hot projects, mentoring programs and benefits, ranging from elder care and child care to flextime and stock options.

The final ranking was based on the results of the survey and wasn't limited to the data presented here. All quantitative data was scored separately and given equal weight. Rankings were based on the status of and information from the companies at the time the survey was conducted.

Data collection and evaluation for this project was conducted by research assistant Allison Wright.

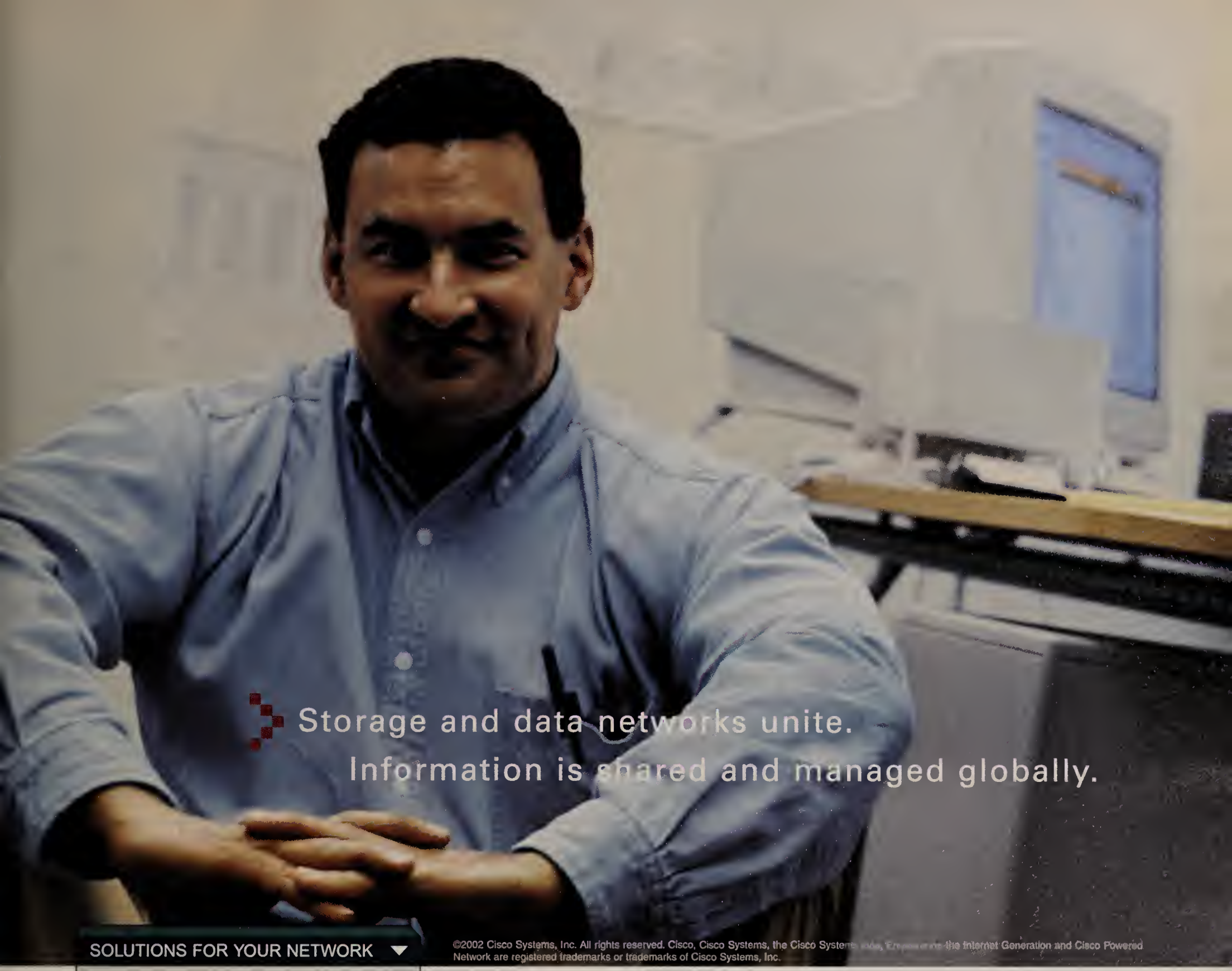
READ MORE ABOUT THE TOP 100 ONLINE

This print listing shows just a piece of the data we collected about the Top 100 U.S. Best Places. Find more information about these best employers in an interactive chart that can be sorted by employer and benefits offered.
QuickLink: a1980

Also online, you'll find exclusive stories and links to our Top 100 Worldwide list.
QuickLink: a1960
www.computerworld.com

The Top 100 U.S. Employers

RANK	EMPLOYER	WEB ADDRESS	INDUSTRY	NUMBER OF IT STAFF
75	**John Hancock Financial Services Inc.**, Boston	*www.jhancock.com*	Insurance and financial services	500-plus
76	**Assurant Group** Atlanta	*www.assurant.com*	Insurance and financial services	500-plus
77	**Appraisal.com Inc.** Buffalo, N.Y.	*www.appraisal.com*	Real estate	11 to 25
78	**Scientific-Atlanta Inc.** Lawrenceville, Ga.	*www.scientific atlanta.com*	Electronics, electrical equipment	101 to 500
79	**Xerox Corp.** Rochester, N.Y.	*www.xerox.com*	Electronic business equipment	500-plus
80	**EPIQ Systems Inc.** Kansas City, Kan.	*www.epiqsystems.com*	Financial software	1 to 10
81	**Telephone and Data Systems Inc.**, Middleton, Wis.	*www.teldta.com*	Telecommunications	500-plus
82	**The Vanguard Group Inc.** Valley Forge, Pa.	*www.vanguard.com*	Financial services	500-plus
83	**Roadway Express Inc.** Akron, Ohio	*www.roadway.com*	Transportation	101 to 500
84	**ACNielsen** Schaumburg, Ill.	*www.acnielsen.com*	Professional services/consulting	101 to 500
85	**AXA Financial Inc.** New York	*www.axa-financial.com*	Financial services	500-plus
86	**American Family Insurance Group**, Madison, Wis.	*www.amfam.com*	Insurance	500-plus
87	**W.L. Gore & Associates Inc.** Newark, Del.	*www.goretex.com*	Manufacturing and R&D	101 to 500
88	**Sigma-Aldrich Co.** St. Louis	*www.sigma aldrich.com*	Chemicals	101 to 500
89	**BellSouth Corp.** Atlanta	*www.bellsouth.com*	Telecommunications	500-plus
90	**Progress Software Corp.** Bedford, Mass.	*www.progress.com*	Computer software and services	101 to 500
91	**Arrow Electronics Inc.** Melville, N.Y.	*www.arrow.com*	Distribution	101 to 500
92	**Harleysville Insurance** Harleysville, Pa.	*www.harleysville group.com*	Insurance	101 to 500
93	**J.C. Penney Co.** Dallas	*www.jcpenney.com*	Retail	500-plus
94	**Sonoco Products Co.** Hartsville, S.C.	*www.sonoco.com*	Forest and paper products	101 to 500
95	**Merrill Lynch & Co.** New York	*www.ml.com*	Financial services	500-plus
96	**Mutual of Omaha Insurance Co.**, Omaha	*www.mutualof omaha.com*	Insurance	500-plus
97	**Calence Inc.** Tempe, Ariz.	*www.calence.com*	Professional services/IT consulting	11 to 25
98	**Software Performance Systems Inc.**, Arlington, Va.	*www.gosps.com*	Computer services	101 to 500
99	**NetByTel Inc.** Boca Raton, Fla.	*www.netbytel.com*	Computer software	26 to 50
100	**NCR Corp.** Dayton, Ohio	*www.ncr.com*	Electronic business equipment	500-plus



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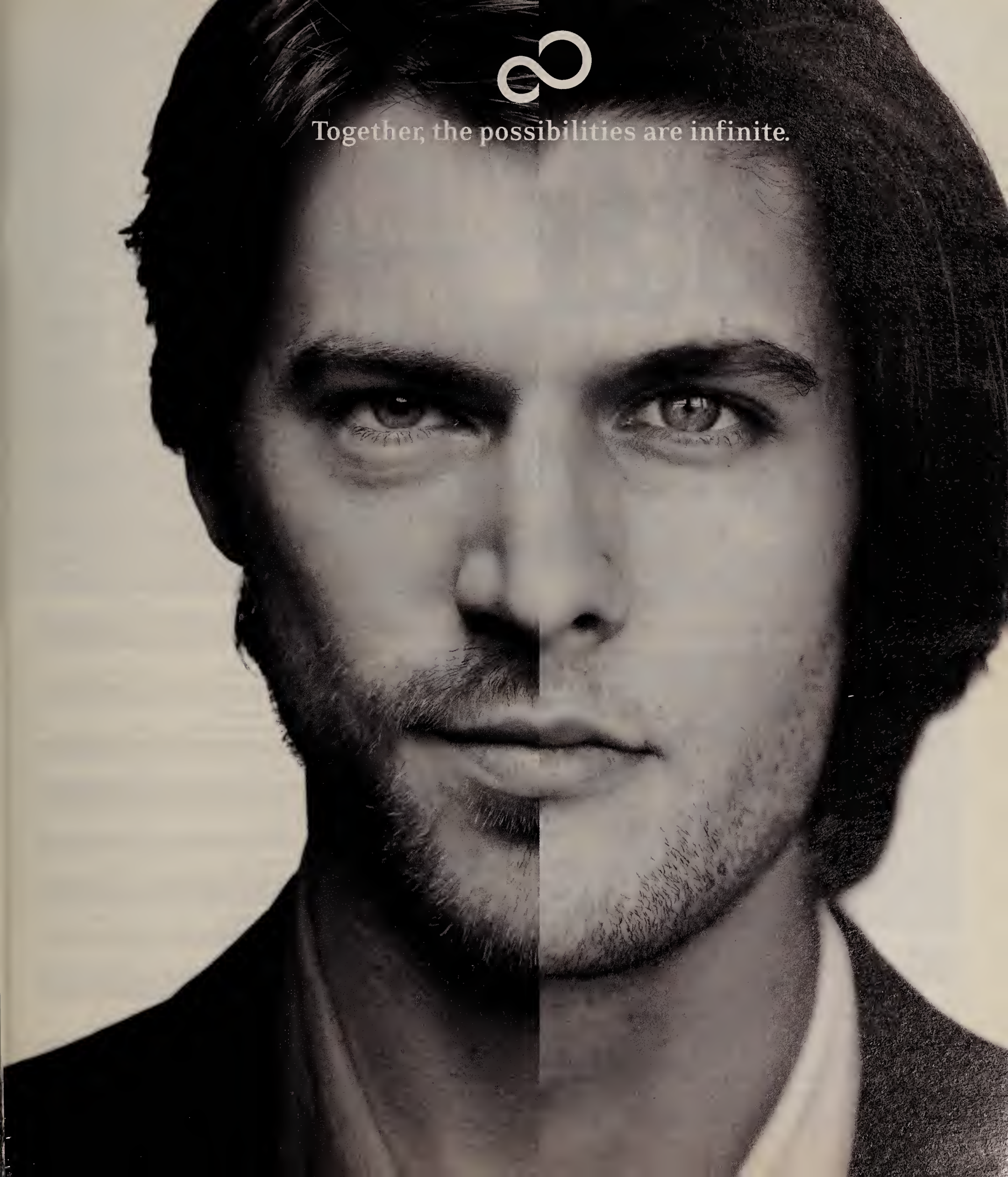
Together, the possibilities are infinite.

All-Star Employer

Former Home Depot CIO Ron Griffin shares his insights on building a winning IT team. By Sacha Cohen

REID HOFFMAN

Q&A

Companies come and go, but The Home Depot Inc. in Atlanta has been a regular atop Computerworld*'s U.S. Best Places to Work in IT for the past nine years. The man behind this IT department was former CIO* **Ron Griffin** *(above), who took the IT group from 35 people to 1,300 in 12 years. Griffin, who resigned from the company in November and has since signed on with Lewisville, Texas-based Fleming Cos., spoke with freelance writer* **Sacha Cohen** *before he left Home Depot about the IT department's stellar track record.*

How can a company maintain investments in its IT staff, despite the slow economy? It's all about prioritizing projects. Some projects are more strategic in nature, some are more about hard-dollar returns. You usually want a balance of investments. We've seen a more conscious deferral of the strategic projects and more emphasis on high-productivity systems.

I don't want to ramp up with permanent staff for a big project and then just lay them off. We would try to staff to base needs and project that across future years and supplement spikes with contract workers. If someone's project got put on hold, they would be assigned to another project. Over 12 years, we never had a layoff in our IT area.

How did you attract good people? Twelve years ago, we knew we would eventually grow to be a Fortune 25 company. We knew how important the people equation was, so we designed our environment and human resource processes around some concepts that we felt were really right.

Essentially, we wanted to adopt an HR model that was based on talent rather than just skills. We wanted our people to be business people first and technologists second. And we wanted people who were people-oriented, who could interact well and thrive in a team-oriented environment.

What did you look for when hiring? Early on, we started giving a programming aptitude test and typically only took folks that scored in the 90th percentile. This was just one of many screening tools we used. When hir-

Continued on page 66

A History of Best Places to Work

	Company	Location	Number of years on list
1	The Home Depot Inc.	Atlanta	9
2	PricewaterhouseCoopers*	New York	8
3	Wal-Mart Stores Inc.	Bentonville, Ark.	8
4	Sears, Roebuck and Co.	Hoffman Estates, Ill.	8
5	UnitedHealth Group Inc.*	Minnetonka, Minn.	8
6	Comerica Inc.	Detroit	8
7	FedEx Services*	Memphis	7
8	J.B. Hunt Transport Services Inc.	Lowell, Ark.	7
9	Minnesota Life Insurance Co.*	St. Paul, Minn.	7
10	FleetBoston Financial Corp.*	Boston	7
11	Caterpillar Inc.	Peoria, Ill.	7
12	Avon Products Inc.	New York	7
13	Computer Associates International Inc.	Islandia, N.Y.	6
14	Xerox Corp.	Stamford, Conn.	6
15	Corning Inc.	Corning, N.Y.	6
16	American Management Systems Inc.	Fairfax, Va.	6
17	Household International Inc.	Prospect Heights., Ill.	6
18	Allstate Insurance Co.*	Northbrook, Ill.	6
19	John Hancock Financial Services Inc.*	Boston	6
20	State Street Corp.*	Boston	5
21	Cabot Corp.	Boston	5
22	Capital One Financial Corp.*	Falls Church, Va.	5
23	AT&T Corp.*	New York	5
24	Harley-Davidson Inc.	Milwaukee	5
25	Entergy Corp.	New Orleans	5
26	International Truck/Navistar International Corp.*	Warrenville, Ill.	5
27	Lands' End Inc.	Dodgeville, Wis.	5
28	Honeywell Inc.*	Minneapolis	5
29	Cigna Corp.	Philadelphia	5
30	Edison International & Southern California Edison*	Rosemead, Calif.	5
31	Standard Commercial Corp.	Wilson, N.C.	5
32	Harrah's Entertainment Inc.	Las Vegas	4
33	First Chicago NBD Corp.	Chicago	4
34	Avnet Inc.	Phoenix	4

* Reflects mergers or different company names used on survey in different years.

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All-Star Employer

Continued from page 64

ing, we also looked for soft skills: team players, people who were adaptable, flexible and energetic.

How do you grow and manage a world-class IT department? We built an in-house training function and standardized on all the platforms we were going to support. Back in 1990, we had nearly every technology known to mankind, and there were no real standards. So we moved quickly to adopt the right standards for us going forward and developed in-house training to develop skills on those standardized technologies.

Whenever it was time to do a project, the technology choices were predetermined in accordance with our standards. Accordingly, we spent more time delivering business value as opposed to assimilating the new "technology of the month." We'd re-evaluate tools and technologies about every three years to update our standards and spend most of our time focused on quality of execution with what we had.

What advice can you offer other IT managers? First of all, create an environment where it's OK to fail. You want to give people a chance to really grow and stretch — be a coach and mentor rather than a judge. As long as people know you care about them as individuals, it's a much richer experience for both.

Managers should be there to support their employees and to help foster a collaborative team environment. At Home Depot, for example, we tried to rally around the best ideas and not just those from whomever has the highest title. Have an open-door policy and keep communication flowing from top to bottom and bottom to top as much as possible. Managers should spend time getting to know new people and trying to get to know them on an individual basis. If you create an environment that is based on relationships, then when you have problems, people will let you know. You get early warnings if you are approachable. Too often people in leadership positions get isolated and are focused on the grand strategy, and they aren't out there with the people.

Learn to develop the art of influence rather than control. Treat people the way you'd like to be treated. Even when you are giving tough feedback to folks, tell them what they need to do to improve. Most will. ◗

Cohen is a freelance writer in Washington.

INTERACTIVE LIST OF TOP 100 HISTORICAL U.S.

For the full list of top 100 historical U.S. Best Places to Work in IT, sortable by company name, industry or ranking each year, visit our Web site.

QuickLink: a1990
www.computerworld.com

	Company	Location	Number of years on list
35	The Chase Manhattan Corp.*	New York	4
36	State Farm Insurance Cos.*	Bloomington, Ill.	4
37	The MONY Group Inc.	New York	4
38	Southwest Airlines Co.	Dallas	4
39	Fannie Mae	Washington	4
40	Barnett Banks Inc.*	Jacksonville, Fla.	4
41	United Stationers Inc.	Des Plaines, Ill.	4
42	Metropolitan Life Insurance Co.	New York	4
43	PepsiCo Inc.	Purchase, N.Y.	4
44	TECO Energy Inc.	Tampa, Fla.	4
45	Amgen Inc.	Thousand Oaks, Calif.	4
46	Merrill Lynch & Co.	New York	4
47	Unum Corp.	Portland, Maine	4
48	Mellon Financial Corp.*	Pittsburgh	4
49	Electronic Data Systems Corp.	Plano, Texas	4
50	Best Buy Co.	Eden Prairie, Minn.	4
51	Outboard Marine Corp.	Waukegan, Ill.	4
52	Hewlett-Packard Co.	Palo Alto, Calif.	4
53	Crown Central Petroleum Corp.	Baltimore	4
54	Staples Inc.	Framingham, Mass.	4
55	KPMG Consulting LLC*	McLean, Va.	4
56	Tosco Corp.**	Tempe, Ariz.	4
57	BellSouth Corp.	Atlanta	4
58	Principal Financial Group Inc.	Des Moines, Iowa	4
59	Aetna Inc.*	Hartford, Conn.	4
60	United Parcel Service Inc.	Atlanta	4
61	General Mills Inc.	Minneapolis	4
62	Burlington Coat Factory Warehouse Corp.	Burlington, N.J.	4
63	AMP Inc.*	Harrisburg, Pa.	4
64	Owens Corning*	Toledo, Ohio	4
65	Sonoco Products Co.	Hartsville, S.C.	4
66	Solectron Corp.	Milpitas, Calif.	3
67	University of Miami	Coral Cables, Fla.	3
68	The Reader's Digest Association Inc.	Pleasantville, N.Y.	3
69	Tech Data Corp.	Clearwater, Fla.	3
70	Cisco Systems Inc.	San Jose	3
71	Nationwide Mutual Insurance Co.*	Columbus, Ohio	3
72	U.S. Bureau of Arms Control	Washington	3
73	Texas Instruments Inc.	Dallas	3
74	USAA	San Antonio	3
75	3Com Corp.	Santa Clara, Calif.	3
76	Levi Strauss & Co.	San Francisco	3
77	The Earthgrains Co.	St. Louis	3
78	Consolidated Stores Corp.	Columbus, Ohio	3
79	The Sherwin-Williams Co.	Cleveland	3
80	Massachusetts Mutual Life Insurance Co.*	Springfield, Mass.	3
81	Fifth Third Bancorp	Cincinnati	3
82	University of Wisconsin	Stevens Point, Wis.	3
83	SunTrust Service Corp.	Atlanta	3
84	Towers Perrin	New York	3
85	New York Life Insurance Co.	New York	3
86	Key Services Corp.	Cleveland	3
87	Parker Hannifin Corp.	Cleveland	3
88	Continental Airlines Inc.	Houston	3
89	The Turner Corp.*	New York	3
90	McDonald's Corp.	Oak Brook, Ill.	3
91	Maytag Corp.	Newton, Iowa	3
92	The Charles Schwab Corp.	San Francisco	3
93	SuperValu Inc.	Eden Prarie, Minn.	3
94	Costco Wholesale Corp.	Issaquah, Wash.	3
95	Georgia-Pacific Corp.	Atlanta	3
96	Harsco Corp.	Camp Hill, Pa.	3
97	Hewitt Associates LLC	Lincolnshire, Ill.	3
98	CDW Computer Centers Inc.	Vernon Hills, Ill.	3
99	AFLAC Inc.	Columbus, Ga.	3
100	Frontier Corp.	Rochester, N.Y.	3

* Reflects mergers or different company names used on survey in different years.
** Phillips Petroleum Co. acquired Tosco Corp. Sept. 17, 2001.

Methodology

How We Chose the 100 Best Places Historical

COMPUTERWORLD The Best Places to Work in IT

The Historical Top 100 Best Places to Work in IT were determined by calculating the cumulative scores from *Computerworld*'s nine annual surveys. Companies were ranked based on the number of times they had appeared on the Best Places to Work list and then by their rankings in those years. In cases where companies had been named to the list an equal number of times, their cumulative placements were totaled and then divided by the number of years named.

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BEST PLACES TO WORK

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Best Practices Are Univ

WORLDWIDE

Whether in Ecuador or England, IT employees seek competitive salaries, unstructured work environments, access to challenging technology projects and strong career development support.

By Sharon Watson

LET'S SAY BERNHARD REISS, storage solutions manager at Compaq Computer Austria GmbH in Vienna, traded places with Diego Lopez, director of IT at software maker Objeq SA in Quito, Ecuador. Or J.J. Chan, a programmer/analyst at the Hospital Authority of Hong Kong, took a job at Agencia Tributaria in Madrid. Certainly, all of these IT workers would need to adjust to working in different languages, cultures and climates.

Yet they would find much that's familiar about their new employers, for each stands out as one of *Computerworld*'s 100 Best Places to Work in IT Worldwide. And while any world traveler knows that some qualities are lost in the translation among countries, much of what makes an exceptional employer does translate across borders, oceans and cultures.

"The differences across regions are subtle, not dramatic," says Alan Parker, a principal at Hewitt Associates LLC, which has offices in Europe, North America and Asia. In various Hewitt surveys of top employers around the world, Parker says the same key factors that make IT and other employees highly satisfied in their jobs are consistent: meaningful work, career opportunities and a positive work environment.

"The top three remain the top three," Parker says.

For Best Places companies, the common elements worldwide are competitive compensation

packages; flat, unstructured work environments; access to challenging IT projects; and strong career development support.

Offer Flexibility in Benefits, Schedules

That doesn't mean that regional differences don't exist among Best Places or color IT work environments. For example, local regulations, such as limits on workweek hours in France, or local customs, such as formal social interaction in many Asian countries, affect company cultures. And in some areas of the world, such as Latin America, concepts like work/family balance are much talked about but not widely practiced, say consultants.

Nonetheless, Best Places consistently reflect several common practices, with one key quality underlying them all: flexibility. It's apparent in everything from compensation to business structure to career development, and it is the base on which most Best Places build their best practices for IT professionals.

For example, at Best Places, it's a given that salaries will be competitive in their regional marketplaces. What sets these employers' offerings apart is the flexibility they offer IT employees in tailoring compensation packages, from salary to benefits.

For example, Ernst & Young U.K. in London gives IT professionals a menu of benefits options so they can create the compensation packages that best suit their situations, from pension contributions to health care and other insurance. The company also negotiates with its workers to help them achieve a balance between their professional and personal lives, which is a growing trend.

"In Western Europe and other places where annual leave policies are not so generous, you'll find professionals trading pay for more leave," says Andrew Milroy, who until recently was director of IDC's European Services group in London and is now director of software services and consulting at IDC Australia in Sydney. He says the opposite is also true: Some IT professionals are willing to trade in vacation time for larger salaries.

Many Best Places are also flexible about when and where IT professionals work, granting them leeway in setting their own schedules and giving them the option to work from home. Such compensation flexibility is critical to Best Places in the post-dot-com global economy, as many companies are rethinking how they treat and pay their IT professionals, say consultants.

"This hiatus in the world economy is giving companies the chance to re-evaluate the IT skills they need," says Parker. He says leading companies are now looking for more teamwork, project management and business skills in their IT professionals.

Create Unstructured Organizations

One way Best Places encourage more cross-fertilization of ideas within and outside of IT is by emphasizing flat, nonhierarchical organizational structures. "Many places have no apparent internal structures," says Milroy. "They don't have clock watchers, no blatant hierarchies, and they encourage ideas to come from everyone."

Such is true at Bankinter SA in Spain, which relies on a flat structure to give IT professionals with the most appropriate skills access to critical business projects. The same goes for Sierra Systems Group Inc., a Vancouver, British Columbia-based systems integrator and consulting firm, where there are no job titles on employees' business cards and newly hired professionals are free to lead veteran project teams. And throughout Scandinavia, IT professionals take it for granted that their bosses will listen to them whenever they have something to say.

But there are exceptions to the flat model.

"Latin American organizations are hierarchical in mentality, if not structure," says Michael Ronan, a senior consultant for the international group at New York-based Mercer Human Resource Consulting LLC (formerly William M. Mercer Inc.). Ronan specializes in the Latin American employment scene and recently completed a three-year assignment in Brazil.

Many Latin American companies still operate via bureaucracy, with power concentrated among key players and minimal knowledge-sharing, he says. "Communication is not a forte of Latin American firms," says Ronan.

Similarly, at companies in many Asian countries, more structure is still the norm, a reflection of the local cultures, says Parker. Nonetheless, Asian businesses also reflect another cultural factor: the importance of personal relationships and their impact on business. Many Best Places go to some lengths to encourage similar strong relationships among their IT professionals.

Many offer formal mentoring programs. Some augment those by sponsoring employee activities outside the office, from pig roasts at chip maker Dalsa Corp. in Canada to company sports teams, motivational seminars and formal and informal meetings at Groupe Steria SCA, a software engineering company in France.

Make Careers Challenging

A friendly work environment should also be paired with challenging projects and a rewarding

THE BEST IN THE WORLD

These stories are just a sampling of our **Best Places to Work in IT Worldwide** package. Online you'll find an **interactive chart** of the top 100 Best Places Worldwide, sortable by company, region and benefits offered, as well as **profiles of each of the companies** and **regional trend stories** from around the world.

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The Best Places to Work in IT

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Hewlett-Packard Austria
(computer software/hardware/services)
Vienna
www.hewlett-packard.at

SAP Austria GmbH
(computer software)
Vienna
www.sap.at

Siemens AG
(electronics)
Vienna
www.siemens.at

Software AG
(computer software)
Vienna
www.softwareag.com/austria

France

Deloitte Consulting France
(professional services/consulting)
Neuilly sur Seine
www.dc.com

EDS France
(IT consulting)
Nanterre
www.eds.com

Groupe SQLI
(IT consulting)
La Plaine St. Denis
www.sqli.com

Groupe Steria SCA
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www.steria.com

Microsoft France
(computer software)
Courtaboeuf
www.eu.microsoft.com/france

Germany

DaimlerChrysler AG
(automotive)
Stuttgart
www.daimlerchrysler.com

The Fraunhofer Institute
(applied research)
Munich
www.fhg.de

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(computer software/hardware/services)
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Italy

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Cernusco sul Naviglio
www.italy.hp.com

IBM Italia SpA
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Segrate
www.ibm.it

Sun Microsystems Italia SpA
(computer software/hardware/services)
Milan
www.sun.it

Spain

Agencia Tributaria
(government)
Madrid
www.aeat.es

Bankinter SA
(banking)
Madrid
www.ebankinter.com

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Best Practices Are Universal

career path to create a Best Place, say IT professionals and consultants.

"The economy means there is less employee sovereignty at the moment, but IT professionals, especially those in high demand, still will go elsewhere if their skills aren't being used," says Milroy.

Virtually all Best Places rely heavily on IT to both drive and enable their business goals. In turn, their IT professionals often report a high level of satisfaction in knowing that their work contributes to their company's mission.

Similarly, most Best Places tie IT career development paths to the company's overall business needs. For example, Repsol YPF, an international oil company in Madrid and Buenos Aires, offers its IT professionals personalized career development plans that stress having detailed knowledge of the company's lines of business.

The Co-operative Bank PLC in Manchester, England, has a formal career development program that encompasses professionals and their managers, encouraging flexible job responsibilities, internal promotions and a reward-based incentive structure.

Yet not all Best Places define career development in the same terms. For example, companies in many Asian countries are still quite structured, so IT professionals there may aspire more to formal promotions, say Asia-based analysts.

In Central Europe, the attributes of career development vary widely among individual countries, each of which has its own distinct culture. Poland and Hungary are perceived as leaders in salary, training and career development. In Russia, however, career opportunities and salaries for IT and other employees are often concentrated at top levels in organizations, says Cameron Hannah, head of Mercer's Central and Eastern European human resources consulting practice.

Hannah and other consultants agree that while multinational firms tend to lead best practices in Central Europe, domestic companies are eager to catch up.

"Quite a few homegrown employers there are very rapidly learning best practices," says Phil Murray, leader of Hewitt Associates' European human resources consulting practice.

So just as water has its own taste depending on where in the world it's drawn, Best Places Worldwide also have their idiosyncrasies. Yet the fact remains: Wherever they are, Best Places are touchstones for universal best practices for IT employment. ◗

Watson is a freelance writer in Chicago.

COMPUTERWORLD
The Best Places to Work in IT

Continued from page 69

Spain

Grupo Ferrovial
(construction)
Madrid
www.ferrovial.com

Repsol YPF
(oil/gas exploration/refining)
Madrid
www.repsolypf.com

Telefonica SA
(telecommunications)
Madrid
www.telefonica.es

England

The Co-operative Bank PLC
(banking)
Manchester
www.co-operativebank.co.uk

Ernst & Young U.K.
(professional services/consulting)
London
www.ey.com/uk

Microsoft Ltd.
(computer software)
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www.microsoft.com/uk

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Bulgaria

Cisco Systems Bulgaria
(computer software/hardware/services)
Sofia
www.cisco.bg

Hewlett-Packard Bulgaria Ltd.
(computer software/hardware/services)
Sofia
www.hp-bg.com

Lirex BG Ltd.
(systems integrator)
Sofia
www.lirex.bg

MobilTel EAD
(telecommunications)
Sofia
www.mobiltel.bg

Rila Solutions AD
(computer software)
Sofia
www.rila.com

Czech Republic

APP Group Inc.
(IT services)
Prague
www.appg.com

Cesky Mobil AS
(telecommunications)
Prague
www.oskarmobil.cz

Eurotel Praha Co.
(telecommunications)
Prague
www.eurotel.cz

Microsoft SRO
(computer software)
Prague
www.microsoft.com/cze

Hungary

Ericsson Hungary Ltd.
(telecommunications)
Budapest
www.ericsson.hu

Lithuania

Omnitel
(telecommunications)
Vilnius
www.omnitel.lt

Sonex Grupe
(telecommunications)
Vilnius
www.sonex.lt

Poland

ComputerLand SA
(IT services)
Warsaw
www.computerland.pl

Polkomtel SA
(telecommunications)
Warsaw
www.plusgsm.pl

Polska Telefonia Cyfrowa
(telecommunications)
Warsaw
www.era.pl

Northern Europe

Denmark

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(shipping, logistics, agriculture)
Copenhagen
www.maerskdata.com

Novo Nordisk IT
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Copenhagen
www.novonordisk-it.dk

Norway

Telenor Business Solutions
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Oslo
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Stockholm
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Africa

South Africa

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www.discovery.co.za

Mobile Telephone Networks Pty. Ltd
(telecommunications)
Johannesburg
www.mtn.co.za

Sasol Pty. Ltd.
(petrochemicals)
Johannesburg
www.sasol.com

Spescom Pty. Ltd.
(IT services)
Johannesburg
www.spescom.com

Asia-Pacific

China

Applied Durability Manufacturing Ltd.
(manufacturing)
Kowloon
www.durablemetal.com.hk

Bank of America (Asia) Ltd.
(banking)
Hong Kong
www.bankofamerica.com.hk

Cathay Pacific Airways Ltd.
(aerospace)
Hong Kong
www.cathaypacific.com.hk

City University of Hong Kong
(education)
Hong Kong
www.cityu.edu.hk

Eli Lilly & Co.
(pharmaceuticals)
Hong Kong
www.lilly.com

Hong Kong Housing Society
(construction/quasi government)
Hong Kong
www.hkhs.com

Hospital Authority
(health care)
Hong Kong
www.ha.org.hk

Kerry Logistics Network Ltd.
(logistics)
Hong Kong
www.kerrylogistics.com

Orient Overseas Container Line Ltd.
(transportation)
Hong Kong
www.oocl.com

Phillips-Van Heusen Far East Ltd.
(apparel)
Hong Kong
www.pvh.com

New Zealand

Ceritas New Zealand Ltd.
Trading as Computerland
(IT services/support)
Wellington
www.computerland.co.nz

Counties Manukau District Health Board
(health care)
South Auckland
www.cmdhb.org.nz

Sovereign Ltd.
(financial services)
Auckland, Wellington
www.sovereign.co.nz

Synergy International Ltd.
(IT consulting)
Auckland, Wellington
www.synergy.co.nz

TelstraClear Ltd.
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Continued on page 72

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BEST PLACES TO WORK

COMPUTERWORLD
The Best Places to Work in IT

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Makati City
www.epldt.com

IBM Philippines Inc.
(computer software/hardware/services)
Quezon City
www.ibm.com/ph

Manila Electric Co.
(utilities)
Pasig
www.meralco.com.ph

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Ecuador

Objeq SA
(computer software)
Quito
www.objeq.com

North America

Canada

Advanced Information Technologies Corp.
(computer software)
Ottawa
www.ait.ca

CollectiveBid Systems Inc.
(financial services)
Toronto
www.collectivebid.com

Dalsa Corp.
(computer software)
Waterloo, Ontario
www.dalsa.com

Montage-DMC eBusiness Services
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Edmonton, Alberta
www.montage-dmc.com

Sierra Systems Group Inc.
(consulting/systems integration)
Vancouver, British Columbia
www.sierrasystems.com

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American Electric Power Co.
(utilities)
Columbus, Ohio
www.aep.com

Avon Products Inc.
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www.corning.com

Fannie Mae
(financial services)
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www.fanniemae.com

Freddie Mac
(financial services)
McLean, Va.
www.freddiemac.com

Harley-Davidson Inc.
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www.harley-davidson.com

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Las Vegas
www.harrahs.com

The Home Depot Inc.
(retail)
Atlanta
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National Information Solutions Cooperative Inc.
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Mandan, N.D.
www.nisc.cc

Nationwide Mutual Insurance Co.
(insurance)
Columbus, Ohio
www.nationwide.com

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www.pwcconsulting.com

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www.rd.com

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www.statefarm.com

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(financial services)
Quincy, Mass.
www.statestreet.com

Symbol Technologies Inc.
(computer software/hardware)
Holtsville, N.Y.
www.symbol.com

United Stationers Inc.
(wholesale)
Des Plaines, Ill.
www.unitedstationers.com

University of Miami
(education)
Coral Gables, Fla.
www.miami.edu

Wal-Mart Stores Inc.
(retail)
Bentonville, Ark.
www.walmart.com

Methodology

How We Chose the 100 Best Places Worldwide

Computerworld's 100 Best Places to Work in IT Worldwide list was compiled from nominations contributed by 21 *Computerworld* editions and sister publications in the following countries: Austria, Bulgaria, Canada, China, the Czech Republic, Denmark, Ecuador, England, France, Germany, Hungary, Italy, Lithuania, New Zealand, Norway, the Philippines, Poland, South Africa, Spain, Sweden and the U.S.

Computerworld editors in each of these countries arrived at their finalists in one of two ways: by conducting a formal survey of the business market or by convening a nominating committee of staff editors and outside labor experts. The process of interviewing and nominating companies was conducted in the second half of 2001, and the results represent data for 2001.

Two sets of selection criteria were used. All country editors applied a set of standard criteria: Honored companies had to offer their IT staffs the best benefits, competitive salaries and opportunities for training and advancement, as well as access to interesting projects and flexible and diverse work environments. Individual country editors then devised a second set of local criteria: Honored companies had to offer their IT staffs satisfying workplaces based on local workforce realities, culture and ideals.

The seven regions where local *Computerworld* editions participated in the project were identified as Western Europe, Central Europe, Northern Europe, Africa, Latin America, North America and Asia-Pacific. The number of finalists from each region was determined based on IT spending statistics and adjusted based on the number of companies that met the standard criteria.

The 100 Best Places to Work in IT Worldwide are presented here, in alphabetical order, by region.

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Invited Distinguished Speakers:

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Ken Andersan, CIO, *Novell*
Ed Cannan, CIO, *Grey Global*
Dan Chenak, Branch Chief, *SIMmet.org Information Civil Defense Choir*
David Connelly, President, *OAGI*
Steve Cooper, CIO, *Office of Homelond Security, Sr. Advisory to the President*
Bill Dawsan, Community Management Staff, *IC CIO*
Mae Devincentis, CIO, *Defense Logistics Agency*
Karen Evans, CIO, *Department of Energy*
Shirley Fields, CIO, *Defense Information Systems Agency*
Jim Flyzik, Sr. Advisor to Gov. Ridge, Vice Chair, *Federal CIO Council*
Linda Gooden, President, *Infromotion Technology Group, LMCO*
Al Grassa, SVP & GM, W3C Center, *MITRE*
Scott Griffin, CIO, *Boeing*
Woody Hall, CIO, *US Customs*
Mark Haffman, President ond Founder, *Commerce One*
Lee Halcamb, CIO, *NASA*
Nancy Johnsan, Executive Director, *Defense E-Business Program Office*
Chris Kelly, Mission Assurance Partner, *Booz Allen Hamilton*
Steve Leanheart, GM & VP, *Telcordio (an SAIC Company)*
John Lainhart, Portner, IA, *PriceWoterhouseCoopers*
Norm Lorentz, CTO, *Office of Management & Budget*
Abbie Lundberg, Editor-in-Chief, *CIO Mogozine*
Mark Maier, Senior Architect, *Aerospace*
Harris Miller, President, *ITAA.org*
Ron Miller, CIO, *FEMA*
Ron Miltan, VP & GM, *CxO Media*
Rex Myers, V21 Chief, *Notional Security Agency*
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Jim Reardon, CIO, *OSD (HA)*
Dr. Ron Ross, Director, *Notional Information Assurance Portnership*
Lew Sanford, e-Government Chief Architect, *GSA*
Bill Smith, Director Project Liberty, *Sun Microsystems, former President, OASIS*
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From April 15 to May 13, 2002, IT customers can visit Computerworld.com to nominate the vendors and technologies from around the world that they consider innovative.

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From May 20 to June 17, 2002, Computerworld will survey those vendor nominees about their technology applications. A panel of outside experts and Computerworld editors will then review the surveys and choose the winners. Survey results and stories that offer practical advice from IT leaders using these technologies will be published in the September 23, 2002 issue of Computerworld, as well as online at Computerworld.com. To nominate a vendor, please go to **www.computerworld.com/research/innovativetech**.

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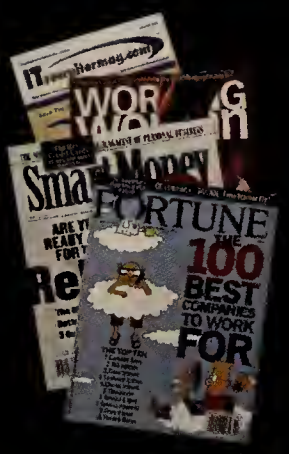
Need More Information? Contact InnovativeTech@computerworld.com. But hurry! The nomination deadline is May 13, 2002!



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Appointments are at the ZP-IV and ZP-V level (equivalent to GS-14 or GS-15); salary range $66,229 - $126,970. Applicants may review vacancy announcement numbers: NIST-02-13881550IV-CAH, NIST-02-13880854IV-CAH, NIST-02-13891550V-CAH, or NIST-02-138910854V-CAH available at www.usajobs.opm.gov or www.jobs.doc.gov/. Applicants MUST apply on-line at www.jobs.doc.gov/ in order to receive full consideration. US citizenship is required. The Department of Commerce/NIST is an equal employment/affirmative action employer.

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Responsible for the development of medical practice computer system based on user requirements. Provide support and write specifications to effectively maintain and enhance system. Automate and monitor medical practice flow. Monitor the operation of assigned application system and coordinate corrective actions when necessary. Supervise and train programmers and other project team members. Will utilize web-based ASP application, architecture, design, development and deployment. Oversee the development of accurate documentation that complies with company standards. Must have a Bachelor's Degree in Electronics and Telecommunications, foreign degree equivalent accepted and 2 yrs of exp. in the job offered. Salary Competitive, Send resume to: Sharon R. Eades, Athens Heart Center. 2005 Prince Ave. Athens, GA 30606

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Work as sr. consultant to lead implemntn. teams and mentor other consultants on Global Logistics Services Network (GLSN) implemntn. methodology; monitor and audit design of complete solutions for global customers; promote appln. of best business practices; function as integral part of GLSN team to deliver solutions for logistics, hi-tech and mfg. markets; gather and document GLSN solutions reqmnts.; dsgn. GLSN Delivery Net solutions; perform mapping, testing and implemntn. of GLSN solutions; ensure that standard GLSN solution design supports appln. of industry-accepted best bus. practices; lead special global projects to develop/enhance the co's. GLSN object model in order to meet bus. reqmnts. of global verticals; utilize logistics and best practices bus. knowledge as well as comp. progrmng. and supply-chain bus. exp. to translate bus. practices into models for GLSN technology solutions. Master's degree in Comp. Sci. or Bus. Admin. or equiv. of Bachelor's degree (or foreign equiv.) in Comp. Sci. or Bus. Admin. + 5 yrs. of progressively responsible exp. as Sys. Analyst or in a directly related occupation is reqd. Must have working knowledge of supply-chain bus. concepts of GLSN, best bus. processes in logistics and supply chain environment, bus. modeling and simulation education. 40 hours/week, OT as reqd. 8 am – 5 pm, $90,000/yr. Qualified applicants submit resume to Director, Pittsburgh/Allegheny County CareerLink, Attention: JS Supervisor, 425 Sixth Aenue, Suite 2200, Pittsburgh, PA 15219 Please refer to Job Order Number WEB239737.

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BOEHRINGER INGELHEIM PHARMACEUTICALS, INC. has an immediate opening in its Ridgefield, Connecticut office for the position of Analyst III.

Performs bioinformatics analysis utilizing bioinformatics research and development skills in different software programs/algorithms and databases related to accessing and analyzing gene function and structural information. Responsible for design and implementation of novel approaches to mining in silico biology data in support of drug target identification and validation efforts against inflammatory and autoimmune diseases.

Must possess at least a Ph.D. in Biology or a related field and at least a bachelor's degree in Computer Science or a related field and relevant experience with bioinformatics research and development in different software programs/algorithms and databases related to accessing and analyzing gene function and structural information and computational skills in application development, such as JAVA, PERL and Oracle.

Resume and/or cover letter must reflect each requirement above and specify reference code AD-GCD/GC0502 or it will be rejected.

Forward resume to BI Staffing Center, PO Box 534, Waltham, MA 02454. Fax number: (781) 663-2431. Email: BIPI@BI-careers.com

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Trainer, Professional Services

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Must possess at least a bachelor's or its equivalent in Computer Science or a related field and relevant experience as a Trainer in IT field, including hands on experience in the design, creation and delivery of technical and non-technical training content; and in the delivery of technical training in a variety of hardware environments, including mainframes and personal computers.

Resume and/or cover letter must reflect each requirement above and specify reference code TPS or it will be rejected.

Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 06926-0700.

Lead Engineer to administer Local/Wide Area Networks involved in the design, installation and support of network equipment and operating systems; to implement and maintain switches, routers, remote access servers, domain servers, security firewalls, application servers and Internet or Intranet devices and connections. Must have a Master's degree in CIS, MIS, Business Administration or related area. Full certification as a Microsoft Certified Network Engineer (MCSE) and Cisco Certified Network Associate (CCNA) and minimum of one-year experience in Local Area Network (LAN) and Wide Area Network (WAN). 40hrs/wk. Send resume to John G. Veres III, University Outreach, Auburn University at Montgomery, 600 S. Court St. Ste 110, Montgomery, AL 36104. Ref. Code: AL-RH.

Programmer/Analyst (2 openings in Norcross, GA): Entry-level positions to design software system using Rational Rose/ Clear Case. Code w/ Java, Servlet/JSP, DHTML, XML, Java Script, C++, VB, COM/DCOM, PL/SQL, SOAP. Configure Apache, Tomcat, Crystal Enterprises/ Reports. Work w/ SQL Server, MySQL. Provide system support for Windows/Linux. Req. B.Sc. in Com. Sc. or its foreign degree equivalent. No prior exp. req. but must demonstrate ability to perform job thru Course-work/ project in OOAD (Rational Rose/ Clear case), Java, C++ & Database systems. Resume w/ transcript to Eddie Mansoori, Palatine Systems Corp., 6801 Governors Lake Pkwy., Ste 100, Norcross, GA 30071

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Send Resume to: Prithvi Information Solutions International, LLC, 214 S. Craig St., Suite #5, Pittsburgh, Pennsylvania 15213 or via e-mail at: info@prithvisolutions.com

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Senior Software Engineer

Pitney Bowes Inc. has an immediate opening in its Danbury, Connecticut office for a Senior Software Engineer.

Expand the features and capabilities of the Company's document messaging product's mission critical real-time control system utilizing OOAD and C++ software under WinNT. Code, design, debug and deploy components of this large C++ application.

Must possess at least a bachelor's or its equivalent in Computer Science, Engineering or a related field and relevant experience as a Software Developer. Must possess experience using OOAD and C++ under WinNT on large scale, multi-developer software projects.

Resume and/or cover letter must reflect each requirement above and specify reference code SSEVC or it will be rejected.

Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 06926-0700

Assoc. Dir. of Tech. sought by software solutions firm to develop product technologies in areas of equities using ARMA/ARCH/ GARCH models, electronic payments, embedded software and POS tech for SmartCard enabled apps. Must have B.S. in Comp. Sci or Engg. + 5 yrs. exp. Reply to: S. Sangisetti, 630 Freedom Business Center, Ste 300, King of Prussia, PA 19046.

Director of Eng. to design software applns. for interactive real time data analysis/data mining in J2EE arch. using Java, Servlets, JSP, XML, BEA logic and Oracle on Windows 95/NT. Must take hands-on role in sales and client development. Oversee offshore product devel. & company website maint. Salary $80K. Job location is Boston, MA. Requires BS in Eng. or Comp. Sci. or Equiv., 5 yr. exp. in Enterprise System/ Distributed Appln. Software Devel. Must have certification in Java, expertise in J2EE technologies. Apply to Desai Technologies, 260 Firestone Drive, Walnut Creek, CA 94598 with proof of work authorization.

Systems Analyst/Programmer wanted by Consulting, Software Developer & Distribution of telecom equip firm to work in Fairfield, NJ. Must have Bach degree & 2 yrs exp. using Oracle, Coldfusion & JavaScript. Respond to: Automatic Systems Design Corp., 11 Stewart Place, Fairfield, NJ 07004.

Several computer related positions available for large transportation and logistics services company. Degree, technical skills & experience vary per positions. Send resume to ups Corporate Office Workforce Planning, Attn: SD6788140255, Glenlake Pkwy., NE, Atlanta, GA 30328. Employer will not sponsor visas for position.

Several computer related positions available for large transportation and logistics services company. Degree, technical skills & experience vary per positions. Send resume to: vivianirizarry@ups.com or United Parcel Service, P.O. Box 833, Mahwah, NJ 07430, Attn: Vivian Irizarry, A-563, Ref. #1. Employer will not sponsor visas for position.

Software Engineer req'd by NY IT Co. must have Master's in Info Sys/Comp. Sci./Engg or eqvlt & 1 yr exp. in designing, developing, implementing & testing web based applications utilizing Oracle, Sybase, J2EE, Java API's, HTML, XML, UML, Websphere 3.5 & Web Objects 4.0 and engaging in internet related technologies focusing on electronic commerce & information management. Respond to HR Dept. Columbia I.S. Consulting Group, 257 Park Avenue South, 7 Fl, NY, NY 10010

Senior/Staff Engineer

Pitney Bowes Inc.has an immediate opening in its Shelton, Connecticut office for a Senior/ Staff Engineer.

Design and code Shipping Applications on AS/400 using PDM, SDJ and RPG.

Must possess at least a bachelor's or its equivalent in Computer Science, Engineering or a related field and relevant experience as a Software Engineer including programming in RPG and AS/ 400, CCL, PDM, SDJ and RPGIV.

Resume and/or cover letter must reflect each requirement above and specify reference code SSEKS or it will be rejected.

Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road, Stamford, CT 06926-0700.

Senior Programmer Analyst

Pitney Bowes Inc. has an immediate opening in its Stamford, Connecticut office for a Senior Programmer Analyst.

Provide advanced software support and development for existing and new Worldwide Postage by Phone installations including system support, troubleshooting and system installations.

Must possess at least a bachelor's or its equivalent in Computer Science or Computer Engineering and relevant experience with Visual Basic 3.0 - 4.0, SOL Database Application programming using ODBC/RDO and Client/ Server architecture and Microsoft SOL Server and Windows NT operating system.

Resume and/or cover loner must reflect each requirement above and specify reference code SPA or it will be rejected.

Forward resume to Robbin Drew Elliott, Pitney Bowes Inc., One Elmcroft Road Stamford, CT 06926-0700.

Network Engineer wanted in Miami, FL. Req. Bachelor in Computer Science or equivalent, plus 2 yrs exp. Will manage Novell Netware 3.12, Windows NT 4, IIS 4, TCP/IP, and Elite. Will monitor system, equipment and provide user support. Fax resume attention: Ms. Mark 305/ 267-5155

SAP Business Information Warehouse (BW) company seeking experienced SAP BW functional/technical consultants familiar with generic and custom extractors, data modeling, info sources and info cubes. Also seeking SEM and Supply Chain Management/APO experience. Please e-mail resume to Business Information Solutions at recruiting@bisamerica.com or fax to (858) 458-5819.

Software Engineer - Piscataway, NJ. Require experience in developing client/server applications using Sybase, Powerbuilder, Unix, NT and Cognos Powerplay. Attractive compensation package. Send resume to Phillip M. Brown, The Janus Group, Inc. 200 Centennial Avenue, Suite # 203, Piscataway NJ 08854.

Software Engineer reqd by a Biotechnology company in CT. Must have Bachelor's degree in Comp. Science/Engg/Eqvlt and 2 yrs exp in analyzing, designing, developing, testing and implementing enterprise applications utilizing RUP, OOAD, Design Patterns, UML, Rational Rose, Data Modeling, ERD, Power Designer, Oracle, OOP, JDK, J2EE, JSSE, JAXP, XML, XSL, CSS, Apache and Weblogic in multi-tier environment under Windows NT, AIX, UNIX platforms. Respond to HR Dept., Agilix Corporation, 2 Church Street South, #401, New Haven, CT 06519.

Web Programmer to encode, test, debug and document various enterprise B2B messaging programs using Java, Java Servlets and JSP, to test and document modifications and write operator instructions, to program specific data models and modify the existing software products according to client's requirements and implement modifications to the interrelation of files and records within programs in consultations with higher level staff. Req. a Master degree in Computer Science or a related science. 40hrs/wk. Send resume to Candace Nelson, Sevista Technologies, Inc., 5550 Peachtree Pkwy, Suite 650, Norcross, GA 30092. Ref. Code: GA-ZLW.

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Software Engineer wanted w/BS & 2 yrs. exp. in New Jersey. Send resume to: HR Dept., Scicom Americas, Inc., 1500 S. Dairy Ashford, Ste. 241, Houston, TX 77077.

ENGINEERING PROGRAMMER sought by designers & integrators of robots & special machinery in Beaumont, TX. Must have Master's in Comp. Sc or Engineering. Respond by resume to Mr. Steve Ingraham, P/Z#10. Sage Automation, Inc. 4925 Fannett Rd., Beaumont, TX 77705.

Systems Administrator, IS/IT Consulting Co., Edison, NJ. Must have Bachelor's degree in Comp. Sc., Engg. 4 yrs of exp. in the job duties or Comp. Software Development and/or Consulting and proficiency in UNIX (or UNIX type e.g. Solaris, AIX) Systems Administration. Send resume to HR Dept., Ref# GG8163, Savant Consulting Group, 505 Thornall St., Ste. 205, Edison, NJ 08837 or fax to 732-744-0135 (no phone calls please).

Sr. Software Engineer, Mt. Laurel, NJ. Must have Master's degree in Comp. Sc. or Mathematics. 5 yrs of exp. in the job duties or Comp. Software Development and/or Consulting and proficiency in OOP, OOD, math modeling, VC++, RDBMS (e.g. SQL Server), rational rose and CORBA. Send resume to HR Dept., Ref# GG8148, Price Systems, LLC, 17000 Commerce Parkway, Ste. A, Mt. Laurel, NJ 08054 or fax to 856-608-7247 (no phone calls please).

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Programmer/Analyst to design, develop, test, & implement web-based & client/server applications using ASP, ADO, VB, SOL Server, XML, XSL, HTML, & DHTML. Reqd: B.S.C.S. & 2 yrs exp. 40 hrs/wk, 9am-5pm. Freq. relocation within U.S. may be necessary. Send resume to J. Brigham, HR #13107, TekSystems, 6992 Columbia Gateway Drive, Columbia, MD 21046.

Systems Administrator wanted by Home Care agency in Aurora, IL. Reqd: Bachelors in Computer Science or Electronics or Communications Engineering. Send resumes to: HR, Caring Home Care Services, Inc., 1881 Commerce Drive, Unit 107, Elk Grove Village, IL 60007. No calls please.

Software Developer Ii's needed to dsgn, implmt, maintain, test single product modules/sub-systems using SOL Server prgmg in FORTE, PB, Smalltalk, C++ &/or OOD on AIX, HP/UX, SUN &/or Win NT operating systems. Apply to Job #350-03-03, EXE, 300 Baldwin Tower Blvd, Eddystone, PA 19022.

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Analyze, design, and test project specifications based on a client's need. Must have Bachelors degree in Business or CS or Related & 3yrs. exp. or 3yrs. exp. in related position w/ability to use: SQL Server, ASP, JavaScript, VBScript & Visual Interdev. 40.0 hrs./wk 8:00 AM - 5:00 PM
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Applicants send cover letter and resume to:

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Atlanta, GA 30329

Responsible for design and development of medical practice computer system based on user requirements. Duties include computer network management, system administration and database design and maintenance using SOL 7.0, SOL 2000, HTML 4.0, MS FrontPage, JavaScript, VB script, XML, JAVA. Must have a Bachelor's Degree in Computer Science & Engineering and 2 years of experience in the job offered or position with the same duties. Send resume to: Athens Heart Center, 2005 Prince Avenue, Athens, GA 30606, attn: Sharon Eades.

Manager of Technology, Lawrenceville, GA. Direct/manage telecom testing & network OA projects to analyze, evaluate, & optimize network performance using network signaling (SS7, PCS-1900, GSM, ISDN), transmission (PCM, PDH, SDH), & datacom (Frame Relay, ATM) technologies. Must have B.S. telecom engineering plus 3 yrs exp in telecom engineering/ mgmt. Employer will accept 6 yrs exp in telecom engineering/ mgmt in lieu of B.S. Must have unrestricted authorization to work in U.S. Respond to HR Dept., RANTEC, PO Box 2164, Lawrencville, GA 30046

Programmer/Analyst
Design, develop, test, & implement computer software for busn apps using following skills: C/C++, Java, COBOL, PL/ SQL on Unix, WIN, & IBM platforms. Min: BS (or equiv) in Comp Sci, Comp Engg, or Elec Engg & 1 yr exp.
Software Engineer
Design, develop, test, & implement software using Powerbuilder V5.0, Oracle, Sybase, Lotus Notes, MS/SOL, & Ingres (for data porting). Min: BS (or equiv) in Comp Sci, Comp Engg or Elec Engg & 3 yrs exp.
Resume: HR Dept, Vertex Soft Inc, 2 Lavendar Dr, Princeton, NJ 08540

Programmer/Analysts with a BS & 2 yrs exp. wanted in Carrollton, TX. Send resume to: HR Dept., SHC Solutions, 1205 West Trinity Mills Rd., Suite 214, Carrollton, TX 75006.

Technical Support Specialist: Evaluate & test vendor-supplied software packages; modify, test & correct hardware & software problems; write recommendation for recovering losses & using backup equipment; assist users to resolve computer-related problems & train employees. Req.: 2 yrs in job offered or 2 yrs in related occupation. Send resume to Taylor Construction, 8607 Roswell Rd., Dunwoody, GA 30350. Ref RB

Multiple IT positions available for ERP/E-Com. Requires B.S. Computer Science or related field & 2 yrs exp in design, development, testing & implementation of software in any of the following areas: SAP (any module), Oracle, XML, JAVA, EJB, COBOL, C/C++, AS/400, Mainframe Interfaces, Web integration tools & Data Trasfer for sales, service, finance, wireless & e-commerce applications. Also looking for QA Tester with 2 yrs in prep of test plans & in prep of BRD and SRS in Client Server & Mainframe environmnet. Send resume to: NexLink Systems, Inc, 2517 Grendon Drive, Wilmington, DE, 19808.

Software Developer
Full life cycle configuration of Siebel implementation, integration & testing in Siebel 2000. Must have BS or equiv. in CS or EE or related & 3 yrs. exp. or 3yrs. exp. in a related position w/ability to use: Siebel and MS Windows. 40.0 hrs./wk 8:00 AM – 5:00 PM
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Software Engineer. Job location: Cincinnati, OH. Duties: Design, develop & implement enterprise software appls. using custom software pkgs. to enable different enterprise appls. to commun. with one another. Perform Enterprise Appl. Integration using SeeBeyond's eGate, IBM's MOSeries, TIBCO's Active Enterprise & Java. Review requirements & architect solutions. Perform detailed tech. design & write & review code. Perform unit, system & perform. Testing & post-deployment support. Requires: B.S. (or foreign equiv.) in Comp. Sci., Eng. or related field & 4 yrs. exp. in the job offered or 4 yrs. exp. as a Consultant, Analyst or Analyst/Prog. Concurrent exp. must incl 4 yrs exp. designing, developing & implementing software appls. & 1 yr. exp. using Java and eGate. 40 hrs/wk.; 8:00a.m. to 5:00p.m. Send resume (no calls) to Molly Stone, CTG, Inc., 800 Delaware Ave., Buffalo, NY 14209-2094.

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STAFF QUALITY ENGINEER/ QA ANALYST to design, promote & implement best practice development & testing techniques in the software development life cycle; Develop program plans for specific projects; Prepare & execute complex software. Require: Bach. degree (or foreign equivalent) in Comp. Sci., Info. Sys., Elec. Engg., or a closely related field. Must have a demonstrated ability to perform the stated duties gained through previous work experience or academic coursework and projects. Competitive salary and benefits. 8-5, M-F Send resume to: SD-HR, CheckFree Services Corp., 4411 E. Jones Bridge Rd., Norcross, GA 30092; ATTN: Job JS (No Phone Calls Please)

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- Responsible for assessing requirements and providing intelligence to the IT organization regarding business trends and management needs and concerns, while at the same time educating, sensitizing, and managing the expectations of the business units with regard to the realities, challenges, and fundamentals of IT.
- To develop and serve in an ongoing partnership with internal customers/department, maintaining in-depth knowledge of business operations, develop and execute IT business strategies, information requirements, and priorities.
- Drive initial customer needs analyses, ensure customer requests are compatible with IT's technical direction, help prioritize needs enterprise-wide, and participates with customers in the development of annual and long-term system plans.
- Use established repeatable practices and procedures, including infrastructure hardware/software standards.
- Evaluate the training needs and provide career development and technical guidance to IT staff.
- Research and analyze new technologies with an eye to improving all of the above.

Requires at least 10 years of experience in the job offered or 10 years of experience in network engineering design & IT support, at least 6 of which must include IT personnel management. Employer will accept suitable combinations of education, training and experience. Salary: $105,000. Please fax resumes to: Attn: HR: 302-322-6184.

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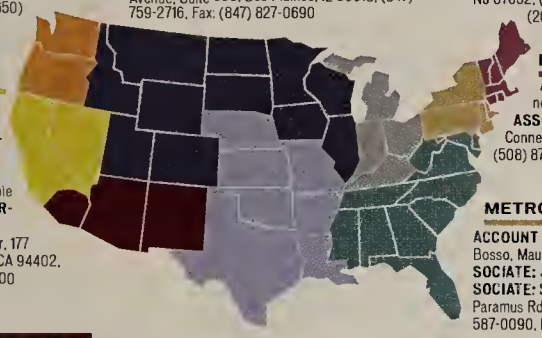

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Postmerger

pected," said Jim Prevo, CIO at Green Mountain Coffee Inc. in Waterbury, Vt.

But with the merger near completion, Prevo is now looking to get specific product details as quickly as possible.

"I think the most important thing they have to do now is to enumerate their product road maps," Prevo said.

"We must know [what HP's product road map is] for planning purposes, particularly with capital budgeting coming up in November," echoed Tom Murphy, CIO at Miami-based Royal Caribbean Cruises Ltd.

As a result, HP needs "to articulate quickly and clearly the product lines they expect to be maintaining, growing, expanding and eliminating," he said.

Both HP and Compaq have said they expect to drop overlapping product lines and technologies after the merger.

Most of the concerns center on midrange and high-end systems, which would present bigger migration challenges and for which users are more likely to have product standards, said Bicky Singh, president of Future Computing Solutions Inc., an HP and Compaq reseller in Yorba Linda, Calif.

In or Out? What Users Can Expect

Some technologies considered "safe" after the merger:

- HP's Unix server technologies
- Compaq's ProLiant Intel servers
- OpenVMS
- Himalaya Non-Stop Servers

Products with a question mark:

- Compaq's Tru64 Unix
- HP's Wintel server lines
- HP's low-end storage products

However, it's not just hardware that users are concerned about.

Vince Hunt, an executive vice president at Altura International Inc., a company in Monterey, Calif., that builds online shopping malls for customers that include Sunnyvale, Calif.-based Yahoo Inc., is nervous about the fate of his application software middleware.

"I'd like to hear HP say that my middleware is going to be an integral part of their business. I'm not putting out large amounts of money to buy HP [software], because of the uncertainty," he said.

HP previously said it plans to release detailed product road maps and migration strategies less than 30 days after the formal closing. But given current anxiety levels, some observers said to expect to see plans sooner.

"They are going to come out with the details at lightning speed," predicted Singh. He said some customers have already received nondisclosure briefings for several weeks now.

It's crucial for users to exercise caution when purchasing products from either company over the next few months, warned Marie Reeve, an analyst at Cicala & Associates LLC, an IT procurement consultancy in Hoboken, N.J.

Expect to see a lot of fire sales and discounts as channel partners of both companies try to get rid of products that are being discontinued or merged, Reeve said. And make sure to have contractual safeguards that protect you when the product is pulled, such as ensuring parts replacement for at least two years, she said. ◗

> They are going to come out with the details in lightning speed.
>
> BICKY SINGH, PRESIDENT, FUTURE COMPUTING SOLUTIONS

The Postmerger Marketplace

The HP/Compaq merger changes the competitive landscape among big system vendors. Here's how HP, Sun and IBM stack up postmerger.

WORLDWIDE SERVER FACTORY REVENUE (2001)

Of a $49.8B market (including mainframes, Unix, Windows, Novell and Linux):

HP + Compaq	30%
IBM	28%
Sun	14%

SOURCE: IDC, FRAMINGHAM, MASS., 2002

WORLDWIDE UNIX/RISC SERVER FACTORY REVENUE (2001)

Of a $20.5B market:

HP + Compaq	34%
Sun	33%
IBM	23%

SOURCE: IDC, 2002

U.S. PC SHIPMENTS, Q1 2002 (PRELIMINARY)

Of 10.6M units shipped:

Dell	28.4%
HP + Compaq	22.3%
IBM	5.4%

SOURCE: IDC, APRIL 2002

STACKING UP THE BIG-SYSTEMS VENDORS

	Revenue (2001)	Employees	Assets
IBM	$85.9B	319,876	$88.3B
HP + Compaq	$78.8B	145,000	$56.4B*
Sun	$18.5B	43,000	$18.1B

SOURCE: HP, COMPAQ, IBM AND SUN * September 2001

IN THE SERVICES BUSINESS

	Employees	Revenue
IBM	150,000	$35B
HP + Compaq	65,000	$15B*

SOURCE: HP, COMPAQ AND IBM * When the merger was announced

STORAGE REVENUES AND MARKET SHARE (2001)

	Revenue	Share
HP + Compaq	$5.2B	26.3%
IBM	$3.4B	14.2%
Sun	$1.5B	6.5%

SOURCE: "WORLDWIDE STORAGE SYSTEMS SUPPLIER REVENUE, 1999-2001," IDC, 2001

HP Deep-Sixes Developer Event

Hewlett-Packard Co. last week announced that it's postponing its Invent 2002 developer conference scheduled to take place in Las Vegas later this month.

The decision was taken after customers told HP that they couldn't afford to attend the four-day conference because of the tough economic climate, HP claimed on the conference Web site.

"Many tell us it is difficult to commit the people and financial resources they would like to attend remotely located multiday events," the HP statement said.

As a result, "HP plans to modify the format of the Invent 2002 content and deliver Web-based and regional events that are highly focused on technologies and topics," the company added.

HP's decision sends the wrong message at the wrong time, said Dwight Davis, an analyst at Boston-based Summit Strategies Inc.

"HP has been pushing pretty hard to elevate its profile among developers," he said.

The effort is crucial for HP, which has been the least active among the major vendors in terms of generating development activity around its technologies, Davis said.

User budgets may not have been the only reason for the event's postponement.

"I understand with the distraction of the merger some things may get put on hold, but that unfortunately has been one of the predicted fallouts of the merger," Davis said.

Another problem with the event was HP's inability to create an attractive program for developers, said Stan Sieler, vice president at Allegro Consultants Inc., a developer of HP Unix and MPE software. People didn't register "because no one could figure out why it was being held. People didn't sign up because of the content, not the cost," Sieler said.

"The marketing people perhaps overestimated the amount of [influence] HP had in the developer community," he added.

– Jaikumar Vijayan

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FRANK HAYES/FRANKLY SPEAKING

Powered by Fear

ARE YOU AFRAID? You probably are. When times are good, many IT people have no fears at all. The rest have a variety of concerns: not gaining that promotion, being stuck on a dead-end project, dealing with an unpleasant boss. But times aren't good, and right now we all dread pretty much the same thing: getting laid off and not being able to find a new job.

That's not unrealistic. You really are at risk of losing your job — even if you do it well. And for that uncertainty, there's no end in sight.

So don't ignore that fear. Use it.

Sure, you could rationalize it away. You know these tough times will end eventually. Small retailers saw bottom around the end of October. Manufacturing, the first sector of the economy to slide into recession, is slowly climbing back out. But IT was the last sector into the quicksand, and we'll likely be the last ones out.

And sure, we *will* eventually see a return to healthy IT budgets and fully staffed IT shops. Talk of a permanently lean IT staff always sounds good to the budget committee. But IT is too strategic today — no company can survive without a healthy IT budget in the long term.

But in the short term, you could end up on the street. That's the gnawing fear we'll all be living with for some time to come.

So don't pretend it's not there. Pay attention to it. Use it as motivation. Take the gut feeling that something's wrong and turn it into action.

Last week, *Computerworld* ran several stories on what to do when you're laid off. This week, here are a few tips on what to do when you *haven't* been laid off — *yet*:

Make yourself less likely to be laid off. Take the unpleasant assignments. Be pleasant to users. Get to work a little earlier. Stay a little later. Solve problems. Don't rock the boat unnecessarily. Does this sound like selling out? Sure it is — right now the company is buying you with that paycheck, and you want to stay bought.

Make yourself more likely to be hired. Learn some new skills on your own time and your own nickel. Join a user group or a professional society, and go to the meetings. Network. Do favors for people who are looking for jobs. Make sure you know which managers will give you a glowing recommendation. But don't worry about polishing your résumé — you'll have plenty of time for that if you get canned.

Start behaving like somebody whose job is in jeopardy. Spend less. Delay any big purchases you can live without. Pay down your credit cards. Scale back your vacation plans. If you've been thinking about a home equity line of credit, now's the time — you won't get it if you need it when you're out of a job.

Adjust your priorities. Move work up a notch or two on the list. Downgrade hobbies and fun. Don't neglect your mate or kids, but make sure they understand that, for now, your job is going to take more time, energy and attention than before. If something's not important, don't try to fit it into your week. Remember, this is temporary — you can always go back to your old ways once the crisis is past.

Take care of yourself. Eat real food, not junk. Exercise. Don't lose more sleep than you have to. Watch TV standing up — that'll keep you from spending hours on the couch. Be nice to the people around you and let them be nice to you. And don't beat yourself up or dwell on what you would or could or should have done differently to make your job safer. It's your job, not your life — don't confuse the two.

Will doing these things make you less afraid? Probably not — remember, you *do* have something to be afraid of.

But if you put that fear to work for you, you'll have a better chance of keeping your job — or handling a layoff if it comes.

After all, if you've got to have fear around, you might as well make it pay its own way. ◗

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

SHARK TANK

"I LOST my files and I need them restored," user tells tech support pilot fish. No problem, says fish. What are the names of the files? Long silence. "What do you mean?" asks user. I need the names of the files you want me to restore, fish says. "I don't know," confesses user. I can't find them without their names, fish explains. "Oh, sure you can," says user. "Just look for the little flower icons on the backup tape. Those are my files."

BATTERY IN a VP's laptop dies, so IT pilot fish sends a quote of $168.50 for a new one to financial controller for expenditure approval. Controller fires back an e-mail asking, "Is the battery rechargeable?"

HELP DESK pilot fish sends out a message to users: Several systems will be unavailable on Sunday evening due to routine maintenance. One user promptly calls to complain, "Didn't you do this last year?"

SOFTWARE ENGINEER pilot fish, getting ready to leave for a conference, requests a company laptop so he can stay in touch with office e-mail while he's on the road. "Our department has four or five high-end laptops for visiting staff," says fish, "so I figured this would not be a problem." And the response doesn't take long at all. Request denied, say the laptop keepers: "Our IS department policy is that company laptops cannot be taken out of the building."

AFTER A CHAIN e-mail makes the rounds at this company, CIO sends e-mail to all users reminding them that this is against company policy, quoting from the employee handbook about appropriate e-mail use. But this IT pilot fish receives an extra copy with a directive at the top: "Please print and distribute to all those employees without e-mail access."

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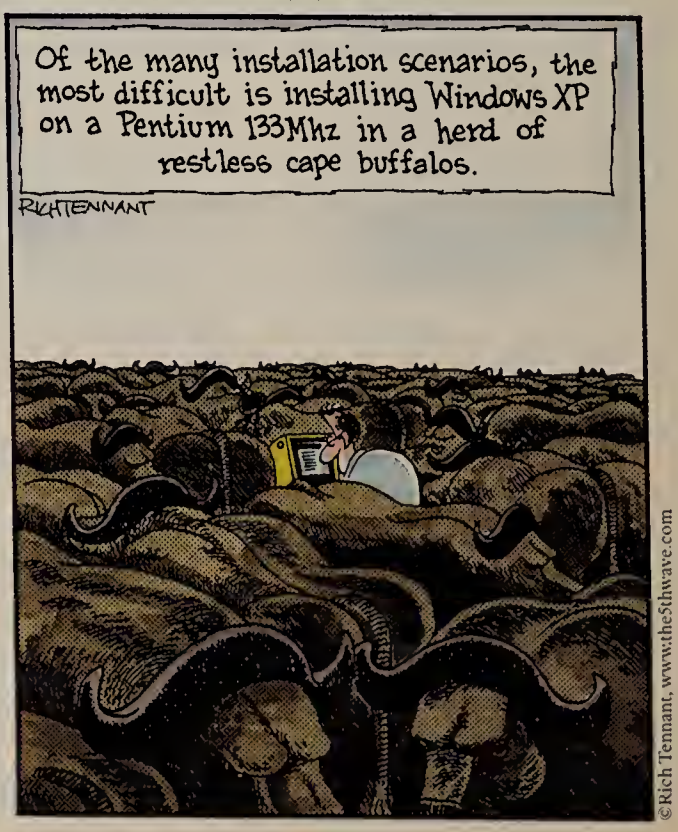
The 5th Wave



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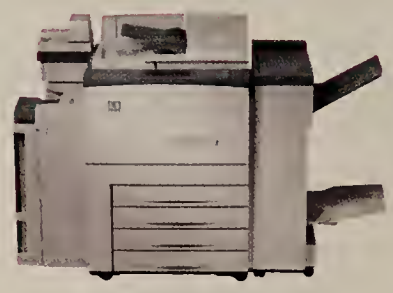

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